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THE SIXTY-EIGHTH ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN WASHINGTON, D. C. DURING THE WEEK BEGINNING MAY 3, 1920.

The American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy will also meet in Washington during week of May 3, 1920.

The U. S. Pharmacopoeial Convention will meet in Washington during the week of May 10, 1920. (Centennial Year of U. S. Pharmacopoeia.)

Entered as Second-class Matter, January 23, 1917, at the Post Office at Easton, Pa., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 10, 1918.

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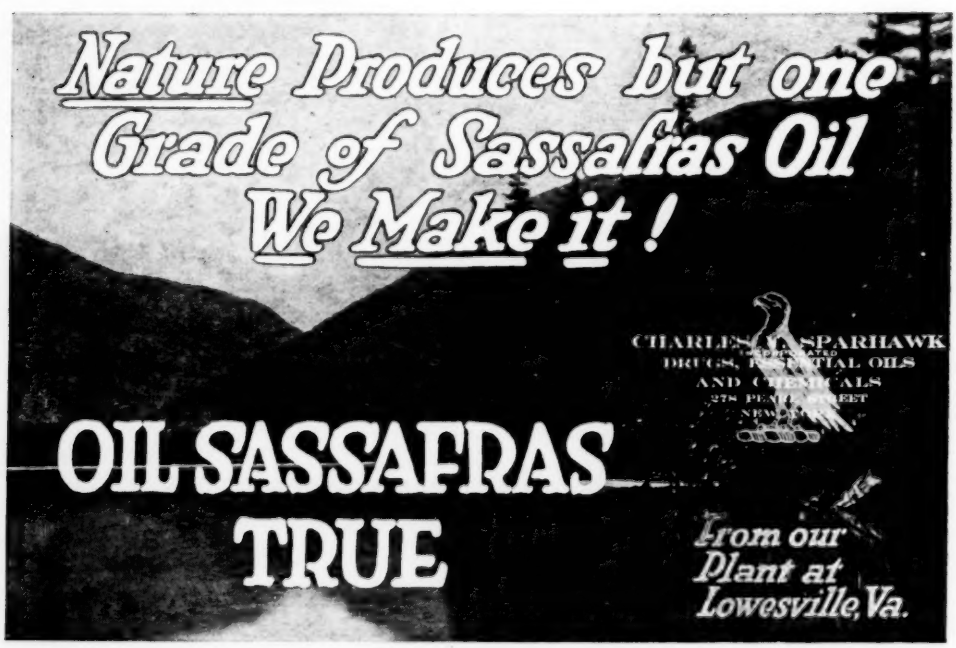
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EAST BOSTON, MASS.

President-elect of American Pharmaceutical Association, 1920–1921

C. HERBERT PACKARD

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. IX FEBRUARY 1920 NO. 2

CHARLES HERBERT PACKARD.

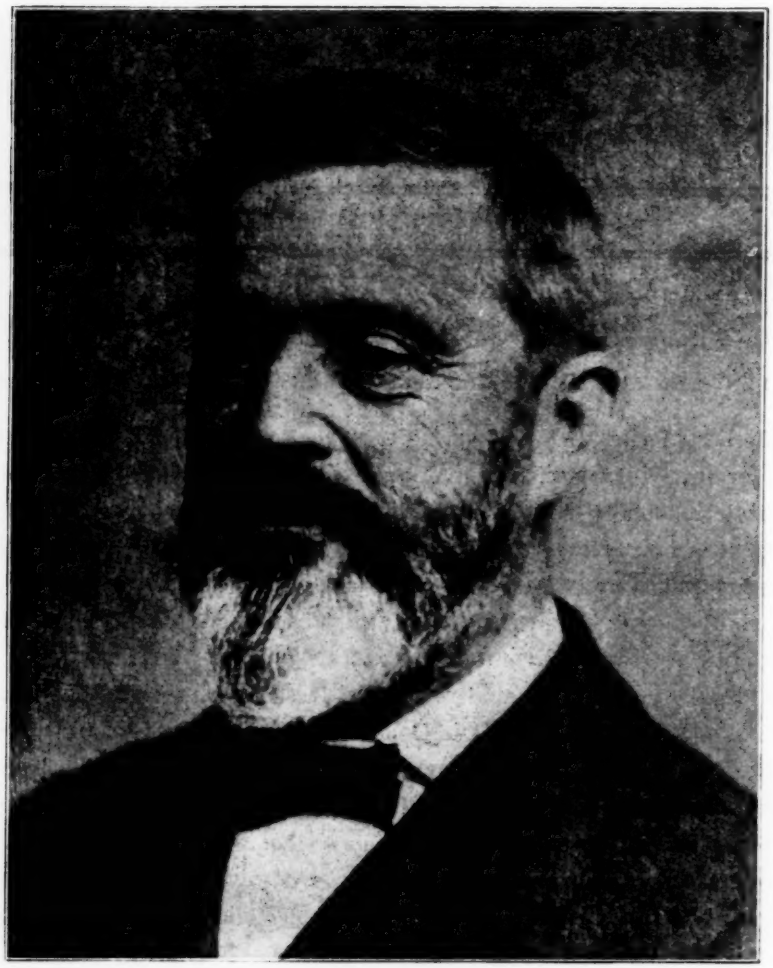
PRESIDENT-ELECT OF AMERICAN PHARMACEUTICAL ASSOCIATION 1920–1921.

C. Herbert Packard, President-elect of the American Pharmaceutical Association for 1920–1921, was born in Amherst, Mass., in 1863. He was educated in the public schools of Boston and, later, at Arms Academy, Shelburne Falls, Mass. In 1885 he purchased the drug store in which he had been employed for five preceding years, at 46 Maverick Square, East Boston; in 1900 Mr. Packard acquired another store by purchase at 7 Central Square, and still owns and conducts both of these establishments.

The President-elect graduated from the Massachusetts College of Pharmacy in 1892, was elected a trustee of the College in 1904, and has been its president since 1909. When the New England Branch of the American Pharmaceutical Association was organized the subject of this brief sketch was elected its president, holding the office for three consecutive years. He was Local Secretary of the American Pharmaceutical Association for the meeting of 1911 in Boston; Third Vice-President of the Association in 1912; Second Vice-President in 1914, and Chairman of the General Membership Committee A. Ph. A. in 1913.

In 1907 Mr. Packard was President of the Massachusetts State Pharmaceutical Association. He has been a member and the treasurer of the Boston Retail Druggists' Association since its organization. While giving most of his spare time to pharmaceutical organizations and his Alma Mater, he takes an active interest in municipal affairs and is a member of a number of fraternal organizations.

E. G. E.



H. C. WOOD, M D

EDITORIAL

E. G. EBERLE, Editor 253 Bourse Bldg., PHILADELPHIA

HOW ARE THE MIGHTY FALLEN!

HORATIO C. WOOD was a giant of soul, no less than of intellect. His great influence for good upon the development of American medicine was not confined to his epoch-making labors in the field of therapeutics, but extended into personal relations as well, and was as much owing to his nobility of character as to his preëminence in science. As author and teacher he will be missed; as a man, he will be mourned.

Inheriting the best traditions of former generations, he added whatever was good in the new things of the new day, and correlating clinical observation with laboratory study, became the Master Therapeutist. To his classes he was the wise, brilliant and beloved teacher; to physicians in general, the esteemed mentor, guide and friend.

This is not the place to detail his important contributions to many sciences; to biology, botany, chemistry, as well as to neurology, diagnosis, clinical medicine and pharmacology. We desire merely to record our appreciation of one of the few greatest men adorning the history of American medicine. Perhaps we are too near his time to estimate him justly; but the future historian, studying the conditions in medical theory, practice, and methods of investigation before and after the time of Horatio C. Wood, will assign him no lesser place than is here indicated, and perhaps a higher one.

Doubtless part of his success as a teacher and as a leader is to be attributed to his remarkable facility in the use of words. Had he chosen to devote his great gifts to pure literature, he would have ranked among the first in American letters. His genius for seeing into the heart of problems and expressing the pith of a matter in a few well-chosen—and sometimes tremendous—words, was rivalled only by his own power of apt and original illustration. His analogies were quaint, and sometimes startling, and thus impressed deeply the truth that he wished to convey. In a single illuminating phrase he often achieved more than others might hope to accomplish by learned and painstaking elaboration. But withal he was accurate. As sincerity was the keynote of his personality, so was truth-seeking the characteristic of his work. His books will remain a mine of information to future students, as they were the delight and wonder of his contemporaries.

The profession of pharmacy, as well as the U. S. Pharmacopoeia, is greatly indebted to him; and pharmacists may well vie with physicians in honoring and keeping green his precious memory.

S. SOLIS COHEN.

WHAT ARE THE FACTS?

THE publicity relative to the toxic properties of methyl alcohol saved many lives, because facts were plainly stated and the truth thereof not distorted in the daily press. The readers understood the message and recognized in it sincerity of purpose. We believe they are ready to coöperate in establishing a new trade name for "wood alcohol" that will not be indicative of an alcohol; manufacturers and dealers should, as far as commercial sales are concerned, employ only the name so selected.

We quote the *Journal of Industrial and Engineering Chemistry* for February, 1920:

> "To the scientist the approach of a newspaper reporter has long been a signal for withdrawal into a shell of silence. For this restraint he could not justly be blamed, for there stood before his memory the distorted condition in which an expert opinion ventured in an unguarded moment by some colleague had appeared in print.
>
> "There are times, however, when the scientist holds the responsibility of safely guiding public opinion. He should speak, and his views should be made known through the widest medium of reaching the public, namely, the press. The difficulty in the past has been the channel through which these views reached the make-up room of the newspaper."

The information by our fellow-member, Dr. Reid Hunt, relative to methyl alcohol as a poison, was given to the public press through the News Service of the American Chemical Society; was put into newspaper style by the latter and the various news agencies gave the matter immediate distribution; the material was used in the news columns and formed the basis of much sound editorial discussion.

More publicity relative to pharmacy would benefit the public and, incidentally, pharmacists. It is important that the information be reported in readable style, and in accord with facts.

Once we were recognized as a nation governed wisely by a few laws; we are now distinguished by the multiplicity of our laws; this not only hampers their enforcement, but adds to costs, in agriculture, manufacturing, and of living. The public is not infrequently aroused to action, or consents to action, without thinking deeply or investigating carefully; legislators supply the quieting or disquieting potion, without diagnoses, by providing legislative measures for every real or imaginary public ailment whereby a few more thousand, or hundred thousand, guardians of the law are added to the rapidly increasing number of officials.

The recent fatalities from methyl alcohol provoked discussions in which, because methyl alcohol is a poison, statements were made that its sale and manufacture should be prohibited *by law*, without thought of the fact that it is one of the most widely used and valuable solvents and regarded as one of the "key chemicals," absolutely necessary for essential commodities.

More might be said of ethyl alcohol, "next to water the most valuable of all chemicals."

There will never be a time when no one will be tempted by appetite or be enticed into excesses by imagination or alluring realities, but the public can be educated relative to facts and make use of them with reason and justice. This question—"What are the Facts?"—meets the eyes of everyone entering the manager's office of a large drug manufacturing plant. Prompted by honest motives and based on a like interrogatory, rational investigation should be made of proposed legislation. The same applies to publicity. The printed card referred to checks unprepared reporters; answers to the question will suppress much needless legislation and make publicity of greater value.

Ida M. Tarbell has said, "It used to be that we thought before we spoke, but in later days it has seemed somewhat as if we spoke and never thought at all."

What are the facts? E. G. E.

NATIONAL FORMULARY COMMITTEE, AMERICAN PHARMACEUTICAL ASSOCIATION, DESIRES ASSISTANCE OF PHARMACISTS.

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We want your criticisms and suggestions.

What formulas or preparations in the present N. F. have you found unsatisfactory? In what respects are they unsatisfactory? Have you any improvements to suggest for them?

What preparations do you think should be discontinued, and why? What should be added?

In waht respects do you find the N. F. faulty or deficient? Have you any suggestions to make for improvements?

The Committee will appreciate criticisms from all sources, suggestions of all kinds, the help of the colleges and editors in arousing interest, and we will assure you of an attentive interest in every communication.

Please send criticisms or comments to the chairman,

WILBUR L. SCOVILLE, P. O. Box 488, Detroit, Michigan.

THE STANDARDIZATION OF BLOOD COAGULANTS.*

BY HERBERT C. HAMILTON.

Hemorrhage, whether due to an abnormal condition of the blood or to lacerated tissues intentional or otherwise, has long been the subject of careful consideration.

Wiggers[1] found that in the different stages of pulmonary hemorrhage pituitary extracts, by their action in raising systemic arterial pressure, while at the same time lowering that in the pulmonary circuit, are peculiarly adapted to its control. This agent, however, has no direct effect on the rate of blood coagulation, its peculiar effectiveness being due to its action on the heart and vessels.

Adrenalin is frequently used and with very good results since it acts to constrict the vessels locally, retarding the flow of blood and permitting the formation of the clot. But so far as known, it has no action on the character of the blood to hasten coagulation.

In hemorrhage, while any step which will favorably influence coagulation is to be recommended, no procedure is equal to one which will shorten the coagulation time of the blood itself, promoting the formation of the clot at the exposed surface of the ruptured vessels and thus more quickly sealing them.

The accepted theory of blood coagulation and its remaining fluid in the vascular system is that the substance essential to the formation of fibrin from fibrinogen is thrombin, which is held in the form of prothrombin by a hypothetical anti-thrombin or anti-prothrombin. Possibly both substances are present, the one to hold the prothrombin, the other to destroy or combine with any thrombin which may be formed. It is very difficult seriously to disturb the equilibrium which maintains intravascular fluidity. When the tissues are lacerated, however, the shed blood, if of normal character, will soon form a clot and tend to seal the wound.

From the edges of the wound the tissue fluids exude, and from the blood platelets, which quickly disintegrate when exposed to the air, similar substances are set free. These two sets of fluids mix with the blood and start the process of coagulation which consists essentially in liberating the prothrombin from its antithrombin binding and in promoting the reaction first between prothrombin, thrombokinase and calcium ions by which thrombin is produced, then between the thrombin and fibrinogen, by which fibrin is split off and the clot formed. Morawitz[2] designated this substance which initiates coagulation as thrombokinase.

The change which has taken place appears to be two-fold. If we consider coagulation as an abnormal condition of the blood, the first departure from the normal is the cessation of metabolism by which the globulins are returned to the blood. When cytoglobulin,[3] the anti-coagulative substance—anti-thrombin—is no longer poured into the blood, prothrombin is set free and predominates.

With the calcium of the blood and in the presence of the tissue fluid containing thrombokinase, which now appears and constitutes the second abnormal condition, thrombin is produced and the clot-formation at once proceeds if the normal blood has been in proper equilibrium. Some have assumed that the office of the

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* Read before Scientific Section, A. Ph. A., New York meeting, 1919.

[1] Wiggers, *Archives of Int. Med.*, 1914, p. 14.

[2] Morawitz, *Deutsch Archiv. f. Klin. Med.*, 179, p. 1.

[3] Schmidt, "Zur. Blutlehre.," Leipzig, 1893.

thrombokinase is two-fold, but proof has been obtained that the latter has no action on the anti-thrombin.[4]

Anti-thrombin seems to be a product of the liver, and its activity or the quantity present in the blood may be greatly increased by the injection of peptone, which can render the blood incoagulable.

Thrombokinase, the name originally given to the tissue and cell juices which initiate coagulation, was believed by Wooldridge[5] to owe its effectiveness to the lipoid lecithin, although he also observed that lecithin, derived from the yolk of eggs, is inactive in this respect.

Howell[6] and his co-workers established the fact that the active agent is lipoid cephalin, which exists in largest proportion in the brain cells, but also occurs in most tissues. Howell further states that cephalin, however carefully prepared, has only a limited period of activity and is dangerous for hypodermatic or intravenous administration. Dr. Hess stated that it should never be used intravenously although intravascular clotting may not be the invariable consequence.

The value of thrombin, prepared from fresh blood serum, is also limited since, unless treated to prevent change, it soon reverts to the inactive metathrombin. In any case the action of thrombin is limited to the amount present since the reaction between thrombin and fibrinogen is strictly quantitative. Rettger.[7]

Davis[8] found that intravenous injection of purified thrombin in relatively large quantities, instead of causing intravascular clotting, had the effect of prolonging the clotting time. There appeared to be an increased formation of antithrombin to compensate for the excess of thrombin.

Blood serum, containing fresh active thrombin, or serum treated to retain the thrombin in an active form, when used in sufficient quantity is an effective agent in shortening the coagulation time of hemophilic blood.

In the case of hemophiliacs there is an abnormal condition due either to an excessive amount of anti-thrombin or a deficiency of prothrombin, or in any particular case both conditions may prevail. It is logical, therefore, to keep in mind the conditions possibly present and to use a product capable of meeting all the requirements.

From the time of the earliest attempts to influence the coagulation time, fresh blood and blood serum have been used. But the difficulty and danger in the former, and the unreliability of the latter, stimulated research to develop a more dependable coagulant.

Among those resulting from various researches are products from blood platelets[9], from brain substance,[10] from blood serum,[11] from tissue extracts and from a combination of these.[12]

---

[4] Lapenta, V. A., Paper read before Delaware-Blackford Co. Medical Societies at Muncie, Ind., Apr. 4, 1919.

[5] Wooldridge, "Beitrage zur Physiologie," 1887.

[6] Howell, "The Coagulation of the Blood," 1916–17.

[7] Rettger, *Amer. Jour. Physiol.*, 24, 406, 1909.

[8] Davis, *Ibid.*, 38, 233, 1911.

[9] Fonio, *Corresp.-Blatt f. Schweiz Aertzl.*, No. 13–15, 1913.

[10] Hess, *Jour. A. M. A.*, 1915, p. 64.

[11] Clowes and Busch, *N. Y. Med. Jour.*, 97, 16, 1913.

[12] Lapenta and Walters, *Therapeutic Gazette*, 34, 24, 1918.

Coagulen is a powder prepared from blood platelets by fractional centrifuging followed by careful desiccation and dilution with milk sugar. It is claimed to be a preparation of lipoid material, one gramme of which represents 20 grammes of dried blood. The active agent of coagulen is a thromboplastin which, according to Howell and others, is nothing else than cephalin and identical with the extract of brain substance. The required dose is not less than 20 Cc.

Thromboplastin, kephalin and hemagulen are names applied to the extract of brain tissue. This is obtained either by extracting with Ringer's solution an artificial blood plasma, and obtaining more or less of a suspension, or by extracting with an ether-acetone-alcohol reagent, by which a yellow lipoid residue is obtained.

Most of these are for local application only or principally, since there is danger of intravascular clotting if intravenously administered.

Blood serum contains no fibrinogen and probably no prothrombin or thrombokinase. It does contain thrombin although in a more or less inactivated form, due to the gradual recombination with antithrombin and the production of a so-called metathrombin.

Coagulase is a purified product obtained by precipitation of fresh horse serum by which an easily soluble powder is obtained, representing practically the active thrombin. The dose is 10 mils of the solution.

Hemostatic serum is a coagulant in liquid form, of which the dose is only 1 to 2 Cc. for any form of administration. It contains three distinct substances all of which are concerned in the process of blood coagulation: 1st, prothrombin, the form in which thrombin exists in the blood; 2nd, thrombokinase or tissue extract, but not derived from brain tissue; and 3rd, a substance which for lack of a more specific name is called anti-antithrombin, a substance similar to antitoxin in that it neutralizes the excess of anti-thrombin and lowers the anticoagulative power of the blood.

With hemostatic serum, therefore, the surgeon is in a position to counteract abnormal conditions of the blood whichever one is responsible for the slow coagulative power, and at the same time to initiate the process of coagulation when the prothrombin content has been augmented and the antithrombin rendered inactive.

The statement has been made that some of the coagulants mentioned have only a limited period of usefulness, unless proper precautions have been taken to remove or inactivate certain accompanying substances. How can it be shown that these precautions have been taken? Clinical reports have shown the effectiveness of freshly prepared extracts of brain tissue or blood platelets. But in the life-or-death cases when a blood coagulant is required are we to depend on the fact that the efficiency of a similar preparation had once been demonstrated?

I have tested three extracts of brain tissue and in only one case has any material shortening of the coagulation time been observed. Only one extract of blood platelets was available for test and in no case, by any means of testing, was it possible to demonstrate coagulative properties.

It is not possible by any known method of examination other than one closely allied to the physiological to determine whether a coagulant of this character is active.

As in other cases where a valuable medicinal agent is not amenable to chemical

standardization, it became necessary to evolve a physiological test in order to have some dependable means of measuring the hemostatic value of these agents. While clinical evidence is, in the final analysis, the sole criterion, clinical evidence is usually slow and often unsatisfactory. As a means of laboratory control over the activity of a product of such vital importance some more flexible method is imperatively demanded.

For testing blood derivatives, such as normal horse serum and coagulose, a method has been applied by which the coagulation time of horse plasma is measured. The test blood is drawn into a solution of sodium citrate or oxalate and the mixture centrifugalized to throw out the corpuscles to facilitate observation. Definite proportions of the coagulant and plasma are mixed and the time recorded when a firm clot is formed. A standard is selected, the maximum period during which the plasma may remain uncoagulated. This test, as shown by the chart, is very satisfactory as a laboratory measurement of value where applicable.

A similar test is theoretically applicable to all the agents mentioned by eliminating the decalcifying agent and keeping the blood plasma fluid by careful drawing and at low temperature.

There is no immediately apparent reason why it is not applicable to hemostatic serum, a product which combines the essential elements of all the other blood coagulants, but repeated experiments have failed to shorten the coagulation time of horse plasma under the conditions described. It was necessary, therefore, to work out a different method since the clinical test—the final deciding criterion—is ordinarily not immediately available.

The logical method for measuring coagulation time is that for which the Bifi-Brooks coagulometer was devised. A large drop of blood, a series of loops in a platinum wire and means for keeping the film of blood in the loops moist and warm, are all that is required for carrying out the test. Very accurate measurements can be made on blood from the human subject and on any one with a coagulation time sufficiently long to permit measurement when the time is greatly shortened.

My experience with the dogs' blood, however, seemed to prove that the apparatus is not readily adapted to the test of coagulation time after hemostatic serum had been administered. The fibrin film in the loop forms so promptly that the shortened time cannot be accurately measured. It is obscured by variations in the behavior of the films of fibrin which do not uniformly retain the web across the loop. This limitation was sufficient to prevent that accuracy which is essential to a proper reading of results.

The method that was finally adopted, as a tentative measure at least, seems not to differ materially from that used for coagulose, except that the action of the hemostatic serum is *in vivo* rather than *in vitro*. The method in detail makes use of an anesthetized dog to facilitate making intravenous injections and the frequent withdrawals of blood for observation.

The dog is anesthetized with chloretone (trichlor tertiary butyl alcohol) by intraperitoneal injection.[13] A femoral vein and a carotid artery are opened and glass cannulae inserted, for injecting the solution and drawing out samples of

[13] Rowe, L. W., *Journ. Pharm. and Exp. Therap.*, 9, 107, 1916.

blood. A convenient amount of blood, about 3 Cc., is drawn into a clean test-tube and immediately placed in water at 40° C. At one-minute intervals it is observed to note the beginning and progress of coagulation, the amount of coagulation being roughly recorded as, — (minus) when no evidence of fibrin formation has appeared, 1 (meaning 1 plus) when this is first observed, 2 (++) and 3 (+++) as it proceeds and 4 (++++) when coagulation is complete and the tube can be inverted without disturbing the clot. In some cases a tough film forms on the surface while the volume of blood below remains fluid. This should be broken so that correct observations can be made.

Before the second and subsequent samples of blood are drawn, the cannula must be carefully cleaned to remove the clot and all adhering particles, and an amount of blood about equal to the sample to be used is discarded.

Several samples are drawn and tested to determine the normal coagulation time before making the injection. After injection of hemostatic serum the first evidence of shortened coagulation time usually does not appear in less than 15 minutes. It may be delayed as long as 1 hour before any consistent shortening of the time is observed. Usually, however, it is advisable to test a sample of blood every 15 minutes. If no effect from an active coagulant is observed in $1^1/_2$ hours, the dog is probably highly resistant to the effect of a hemostatic and must be discarded. While such a condition is not easily explainable, failure is not an unusual occurrence in physiological testing.

Another difficulty which occasionally appears in attempting to carry out tests by this method is, that shortening in the coagulation time occurs with no apparent reason. This has also been observed by Drinker and Drinker[14] but our results differ from their observations because the hemorrhage is not so severe as is shown in their technic.

The standard for hemostatic serum is a shortening of the coagulation time to one-third or one-fourth the normal time for that test animal. Clinical tests have repeatedly verified the correctness of the results by this test and seem to establish definitely the fact that this is a dependable means of assay. The method was suggested by some work described by Howell[15] in which cephalin was injected intravenously. The production of thrombin was demonstrated by this method just as definitely as when added to the blood outside the body.

It is possible and even probable that by using mixtures of pure fibrinogen and thrombin, or other combinations of blood constituents, the test will be further simplified to eliminate the test animal; experiments so far have not proved satisfactory.

Until such work has been successfully prosecuted, we are content to depend on the physiological test which seems in every way to run parallel to clinical results.

PROTOCOLS OF TESTS.

In this and all subsequent tables the first column of figures refers to the time of observation of the sample of blood.

At the head of the columns that follow is the actual time when the sample of blood is drawn or sample of coagulant is injected.

[14] Drinker and Drinker, *Amer. Jour. of Physiol.*, 38, 233, 1915.

[15] Howell, "The Harvey Lectures," 1916–1917, p. 296.

The figures below the time are symbols:

1, signifies beginning of fibrin formation; 2 and 3, progressive clotting; 4, solid clot when tube is inverted.

COAGULATION TIME TESTED BY EFFECT IN VIVO.

HEMOSTATIC SERUM—R# 050879.

Tested Aug. 22, 1919.

Minutes	10:00	10:10	10:20	10:22	10:51	11:01	11:08	11:11	11:18	11:36
1	—	—	—	Inj.	—	1	3	2	3	4
2	—	—	—	2	—	2	4	3	4	
3	1	1	—	Cc.	1	2		4		
4	1	2	1	sample	1	3				
5	2	2	2		2	4				
6	2	3	2		3					
7	3	3	3		4					
8	3	3	3							
9	4	4	4							

Coagulation time shortened from 9 minutes to 1 minute.

Sample A.—From Blood Serum.

Tested July 22, 1919.

Minutes	1:13	1:57	1:58	2:16	2:35	3:40
1	—	Inj.	—	—	—	—
2	—	solution	—	1	1	—
3	—		—	2	2	—
4	—		1	3	4	—
5	1		2	3		—
6	2		3	4		1
7	2		4			2
8	3					3
9	4					4

Coagulation time shortened to one-half normal.

Sample A.—From Blood Serum—Coagulation Test.

Using Decalcified Sheep Plasma.

Minutes	Normal	0.025	0.05	0.1	0.2	0.4	0.6
15		1	1	1	2	4	4
25		1	1	1	2	4	4

Coagulation complete in 15 minutes with 0.4 Gm. of Sample A.

In the serum tests the columns are headed by the amount of sample added to plasma.

Sample B.—TESTS OF ACTION IN VIVO.

Tested July 23, 1919.—From Blood Platelets.

Minutes	10:27	10:33	10:40	10:53	10:55	11:01	11:11	11:18	11:21	11:38
1	1	1	1	Inj.	1	1	1	Inj.	1	1
2	2	1	2	2 Cc.	3	2	2	2 Cc.	2	2
3	3	2	3	sample	3	3	3	more	3	3
4	3	3	3		4	3	3	of	4	4
5	4	3	4			4	3	same		
6		4					4			

Same Test Continued.

Minutes	1:12	1:20	1:31	1:40	1:53	2:17	3:27
1	1	Inj.	1	2	2	1	1
2	1	2 Cc.	2	3	3	2	1
3	2	more	3	4	3	3	2
4	3	of	4		4	4	3
5	4	same					3
6							4

Sample B—(Second Test).

Minutes	9:58	10:05	10:15	10:21	10:29	10:40	10:53	11:02	11:15	11:39	11:46	1:14
1	—	—	1	—	Inj.	—	—	—	—	1	1	1
2	1	1	2	1	4 Cc.	—	—	—	—	2	2	1
3	1	1	2	1		1	1	1	1	3	2	2
4	2	2	3	2		3	1	1	2	3	3	2
5	3	2	3	3		4	2	2	3	3	4	3
6	3	3	4	4			3	3	4	4		3
7	4	4					4	4				4

Coagulation time not materially shortened.

Sample B.—From Blood Platelets.

Coagulation tests using horse plasma *in vitro*.

Minutes	Normal	0.05	0.1	0.12	0.15
1	—	—	—	—	—
2	—	—	—	—	—
3	—	—	—	—	—
4	—	—	—	—	—
5	—	—	—	—	—
6	—	—	1	—	1
7	—	—	1	1	1
8	1	1	1	1	1
9	1	1	1	1	1
10	1	1	2	1	2
11	1	1	3	1	2
12	2	2	4	2	2
13	3	3		3	3
14	4	3		4	4
15		4			

Practically no shortening of the coagulation time resulted from use of this agent.

Sample C.—From Brain Tissue.

Tested July 23, 1919, by action *in vivo*.

Minutes	10:13	10:22	10:31	10:34	10:47	11:00	11:15	11:29	11:53	1:17
1	—	—	—	Inj.	—	—	—	—	—	—
2	—	—	—	2 Cc.	—	—	—	—	1	1
3	1	1	1	sample	1	1	1	1	2	1
4	1	1	2		1	1	1	2	3	2
5	2	2	3		2	2	2	4	3	2
6	2	3	3		2	3	3		3	3
7	3	4	4		3	4	4		4	3
8	4				4					4

Test continued.

Minutes	1:28	1:33	1:38	1:50	1:55	2:34	2:58	3:12	4:11	4:21
1	Inj.	1	1	1	1	3	1	3	3	2
2	4 Cc.	3	2	2	2	3	2	4	4	3
3	sam-	4	2	3	3	4	3			4
4	ple		4	4	4		4			
5										

The action was both prompt and lasting when a second injection of 4 cc. was made. Not only did it appear in 5 minutes but the shortened coagulation time extended over a period of 3 hours.

The dog was alive the next morning although useless for further examination. The effect

of the thromboplastin was so strong as to clot the blood in the artery making it difficult to obtain samples.

Shortened coagulation time from 7 minutes (original) to 2 minutes.

Sample C.—From Brain Tissue.

Coagulation test using horse serum.

Minutes	Normal	0.05	0.1	0.15	0.2
1	—	—	—	—	—
2	—	—	—	—	—
3	—	—	—	—	—
4	—	1	1	—	1
5	—	2	2	—	2
6	—	4	4	1	4
7	—			4	
8	—				
9	—				
10	1				
11	3				
12	4				

Coagulation time shortened to 6 minutes.

Sample D.—From Brain Tissue.

Material emulsified with normal salt solution.—Tested July 23, 1919.

Minutes	2:30	3:30	3:40	3:41	3:54	4:05	4:22
1	—	—	Inj.	—	—	—	—
2	—	—	2 Cc.	1	1	1	1
3	1	1	emul-	1	1	1	1
4	2	1	sion	2	1	2	2
5	2	1		2	2	3	3
6	3	2		3	2	4	4
7	3	3		3	3		
8	4	4		4	4		

Sample D (Second Test).

Tested Aug. 11, 1919.

Minutes	9:58	10:06	10:50	10:53	10:57	11:11	11:21	11:31	11:33
1	—	—	—	Inj.	—	—	—	—	—
2	1	1	1	2 Cc.	1	1	1	1	1
3	2	2	2		2	2	2	2	2
4	2	3	2		2	3	3	3	3
5	3	3	3		3	4	3	3	4
6	3	4	3		4		4	4	
7	4		4						

Coagulation time scarcely affected.

Test of Hemostatic Serum—B 049606.

Same day. Same dog.

Minutes	1:15	1:26	1:28	2:17	2:30	2:45	2:55
1	—	Inj.	1	—	—	1	2
2	1	2 Cc.	2	1	1	2	4
3	2	hem.	3	2	2	4	
4	2	Serum	3	3	3		
5	3		3	4	4		
6	4		4				

Coagulation time shortened from 6 to 2 minutes.

Sample E.—From Brain Tissue.

The material was injected in form of an emulsion with normal salt solution.—Tested Aug. 9, 1919.

Minutes	10:49	10:56	11:13	11:25	11:40	1:45	2:25
1	—	—	Inj.	1	1	1	—
2	1	1	5 Cc.	1	2	2	1
3	2	2	emulsion	2	3	3	2
4	2	2		3	4	3	2
5	3	3		4		4	3
6	3	3					4
7	4	4					

Coagulation time only slightly affected.

TEST OF HEMOSTATIC SERUM.

Same day. Same dog.

Minutes	2:25	2:35	2:37	3:10	4:09	4:15
1	—	Inj.	1	1	2	2
2	1	2 Cc.	2	2	2	4
3	2	of	3	3	4	
4	2	sample	3	4		
5	3		4			
6	4					

Coagulation time shortened from 6 minutes to 2 minutes in $1^2/_3$ hours.

An illustration of one form of failure which occasionally occurs in attempting to test a coagulating agent.

May 21, 1919.

Minutes	10:33	10:43	10:49	10:52	11:48	1:31	2:11	3:00
1	—	1	1	4	2	1	1	2
2	—	2	4		4	3	2	3
3	1	3					3	
4	2	4						
5	2							
6	2							
7	3							
8	3							
9	4							

No injection was made into this dog as the coagulation time would not remain uniform at any time.

RESEARCH LABORATORY
PARKE, DAVIS & CO.
DETROIT, MICH.

ABSTRACT OF DISCUSSION.

DR. PITTENGER: I just wish to state that during the past several months I have had considerable experience in testing blood coagulants. Although we have not done as much work towards perfecting the method as Dr. Hamilton brings out in his paper, we have obtained practically the same results, *viz.*, that there are quite a few preparations on the market which appear to be valueless as to their coagulant properties, and some others which apparently do the work very well.

I employed a method somewhat similar to his in which I used very small paraffined glass test-tubes. The only difference between Dr. Hamilton's technique and that which I employed was that our experiments were carried out at room temperature. We anesthetized a dog, tied a paraffin-coated cannula into the carotid artery, and then withdrew four or five tubes of normal blood. The coagulant was then injected into the saphenous vein and samples of blood drawn

into paraffined tubes every two minutes. The clotting time of the normal blood was then compared with the clotting time of the samples taken after the coagulant was injected. We found that normal blood clotted in about fifteen to twenty minutes, while after an effective coagulant was injected the clotting time was reduced to four to eight minutes. We found, however, that a few of the preparations on the market instead of increasing the coagulability of the blood actually retarded coagulation. In one case after injecting a so-called coagulant, clotting did not take place in two hours, whereas the normal blood from the same animal clotted in eighteen minutes.

A STUDY OF CHENOPODIUM AMBROSIOIDES VAR. ANTHELMINTICUM AND ITS VOLATILE OIL.*

BY ELMER HAUSER WIRTH.†

Oil of Chenopodium, or oil of American Wormseed, is official in the United States Pharmacopoeia (IX) as Oleum Chenopodii. The fruit of Chenopodium was formerly also official but was dropped from the U. S. Pharmacopoeia in 1900. The drug and its oil have long been esteemed as anthelmintics and are said to have been used by the Indians as vermifuges before the landing of Columbus. They are particularly useful for ascarides which they seem to narcotize so that they may be eliminated by means of a cathartic or laxative.

During the duration of the World War, which caused a shortage of thymol, the oil also found use in the treatment of hookworm. Schüffner and Vervoort[1] claim it to be superior to thymol, naphthol or eucalyptus oil in the treatment of this infection, which view is supported by Levy[2] in several case reports.

The anthelmintic action is attributed to the compound first isolated by Schimmel & Company[3] and named by them "ascaridol." Kobert,[4] 1914, detected the presence of two saponin bodies in the herb and seeds. He claims that the anthelmintic action of the powdered drug is due to these saponin bodies as well as to the essential oil.

The source of the oil is the mature plant of *Chenopodium ambrosioides* var. *anthelminticum*. The principal supply comes from Maryland[5] although attempts have been made to raise the plant commercially in the Middle West.[6] These plants, however, always give an oil of low specific gravity.

The volatile oil is distilled from the plants with steam; practically all of the oil is contained in the seeds. The leaves contain some oil; however, it is usually absent in the mature plant; the stem contains no oil.

Owing to the interest in oil of Chenopodium, particularly as the market supply was inadequate in 1918, several hundred plants of *Chenopodium ambrosiodes* var. *anthelminticum* were grown at the Botanical Gardens of the University of

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† The author wishes to acknowledge his deep indebtedness to Professor Henry Kraemer for his many kind and helpful suggestions during the progress of this work.

[1] *München. med. Wochnschr.*, 60, 129, 1913.

[2] *Jour. A. M. A.*, 63, 1946, 1914.

[3] Schimmel & Co. Report, 1908, p. 114.

[4] Schimmel & Co. Report, 1914, p. 100; Year Book, A. Ph. A., 1914, p. 206.

[5] *Amer. Jour. Pharm.*, 22, p. 303.

[6] *Ibid.*, 26, p. 503.

Michigan, with the view of studying the origin of the oil in the plant, as well as the chemical composition of the oil that could be distilled. Several chemical investigations of the Maryland oil have been made[7] but, as far as could be found, no such investigations have been carried out with the "western" oil. The general opinion, that the western oil is inferior to the Maryland variety, seems to be based upon an article written in 1854.[8] It was, therefore, of interest to make a comparative examination of the oil which fell under the heading of the "western" variety.

THE PHARMACOGNOSY OF CHENOPODIUM.

Chenopodium ambrosioides var. *anthelminticum* (L. Sp. Pl. 220,1753) is known under the common name of American Wormseed and is a member of the Chenopodiaceae or Goosefoot Family. *Chenopodium ambrosioides* is an extremely variable plant and there are a number of well-recognized varieties. They are all rich in volatile oil, the composition of the oil, no doubt, varying with the variety. The plant grown at Ann Arbor seemed to correspond to the var. anthelminticum (Gray) and the following official description applies to the plant whose oil was studied.

"Ill-scented, erect or ascending annual or perennial, 3–10 dm. high, the branches stout, simple or paniculately branched, glabrous or puberulent below, usually glandular villous or tomentulose about the inflorescence but occasionally glabrous; lower leaves petiolate, the blades 2–12 cm. long, 1.5–5.5 cm. broad, oblong to ovate or lanceolate, coarsely or irregularly semidentate, or sinuate-pinnatifid, the lobes acute or obtuse, entire or dentate obtuse to attenuate at the apex; cuneate at the base, copiously gland dotted or the glands rarely wanting, puberulent, short villous, or glabrous; flowers solitary or usually densely glomerate in dense or interrupted, slender or stout elongate spikes, these leafy or naked, the blades much smaller than the smaller ones, lanceolate oblanceolate, spatulate or linear obtuse, acute or attenuate; the calyx about 1 mm. high, glabrous or short villous, usually gland-dotted, the lobes rounded ovate, obtuse, completely enclosing the fruit; stamens exerted; pericarp very thin; seed horizontal or vertical, 0.6–0.8 mm. broad, nearly black, the margin obtuse."[9]

This variety of Chenopodium is indigenous to the Western Continent probably having its origin in Tropical America. It may be found growing in pastures and waste grounds throughout the United States, being most common in the South and West. It is cultivated principally in Carrol County, Maryland,[10] being the source of the so-called "Baltimore" oil.

THE FRUIT.

Since the fruit yields practically the entire amount of oil, a morphological and histological study of it seemed of considerable interest, and this proved to be the case. The fruit is a one-seed utricle or achene-like fruit, consisting of a seed and pericarp loosely enveloped in a five-parted, irregularly thickened calyx (Figs. I, III and IV). The entire fruit, with the calyx, is from 1 to 2 mm. in diameter, and in a fresh state is bright green in color, changing gradually to a pale straw color upon drying. The fruits occur solitary or glomerate in spiked panicles.

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[7] Schimmel & Co. Report, April, 1908; *Jour. Am. Chem. Soc.*, 33, 1404.
[8] *Amer. Jour. Pharm.*, 26, p. 503.
[9] North American Flora, Vol. 21, Part I, 44, 1916.
[10] *Jour. Amer. Chem. Soc.*, 33, 1404, 1911.

The sepals are joined at the summit and along the margins, thus entirely enclosing the pericarp which closely coheres to the seed (Figs. II*d*, III and IV). The pericarp is usually free (Fig. III), but in occasional cases is attached to the calyx near the summit (Fig. IV). An abundance of glandular hairs occurs upon the outer surface of the pericarp (Figs. II*d*, III and IV).

Although various authorities state that the seed occurs vertical,[11] we were unsuccessful in finding such a case. The seed in all cases occurs in a horizontal position. The ripe seeds are jet-black and shiny, usually lentil shaped, 1 to 1.5

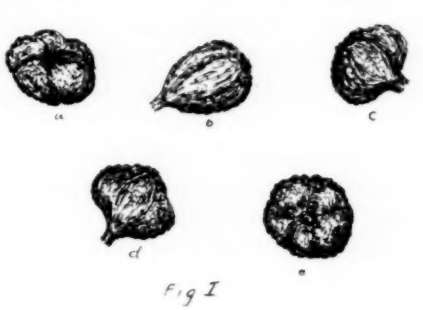

Fig I

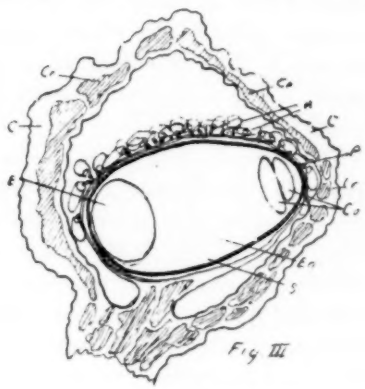

Fig III

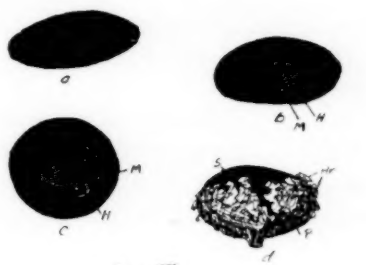

Fig II

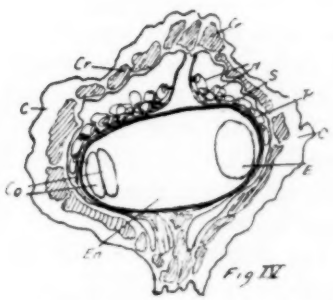

Fig IV

Fig. I.—Fruits showing the Five-Parted Verrucose Calyx.—*a*, view from above; *b*, view from side; *c*, view from side; *d*, view from side; *e*, view from below.

Fig. II.—*a*, *b*, and *c*, seeds showing *H*, hilum; *M*, micropyle; *d*, seed with part of the pericarp still adhering; *S*, seed; *Hr*, glandular hairs; *P*, pericarp.

Figs. III and IV.—Longitudinal Sections through the Calyx and Fruit.—*C*, calyx; *S*, seed; *P*, pericarp; *E*, root of embryo; *H*, hairs; *En*, endosperm; *Co*, cotyledons; *Cr* (shaded portion) represents cells filled with microcrystals of calcium oxalate.

mm. in diameter and 0.5 to 0.75 mm. thick. The unripe seeds vary in color from brown to nearly black. The embryo is coiled in a campylotropous position and surrounds the endosperm which contains starch.

THE CALYX.

The calyx is persistent and consists of five sepals being united at the summit as well as along the margins, the five clefts of the calyx being very prominent (Fig. I). The surface is verrucose, but contrary to opinion it is not gland-dotted, although glandular hairs of the same type as occur in other parts of the plant are occasionally present. The epidermal cell sare thin walled, irregular and somewhat

[11] *North American Flora*, Vol. 21, pp. 1–44; Gray, *Manual*, 5, p. 406.

wavy (Fig. IX), the undulate character however is not as pronounced as in the surface cells of the pericarp (Fig. XI). Stomata occur in large numbers (Fig. IX). The guard cells are broad while the pore is narrow and elongated. The stomata vary in length from 0.025 to 0.035 mm., and in breadth from 0.020 to 0.025 mm. while the width of the pore rarely exceeds 0.003 to 0.004 mm. The neighboring cells are parallel to the pore.

Longitudinal sections through the calyx (Figs. V, VI and VII) show the leaf-like structure consisting of from two to ten or twelve rows of more or less regular mesophyll cells between the two epidermal layers. The dorsal epidermis consists of a single row of cells whose outer walls are somewhat thickened. The ventral epidermis is likewise composed of a single row of cells but this layer is free from stomata. The ventral epidermal cells are as a rule smaller than the dorsal and the cuticle is thinner.

The mesophyll cells are more or less regular tending towards an ovoid shape in palisade arrangement. Directly below each stoma is an intercellular space varying in size from three to five times that of an average mesophyll cell (Fig. VIII). The mesophyll cells near the ventral epidermis are completely filled with micro-crystals of calcium oxalate. These crystals are usually triangular or arrow-shaped and do not exceed 0.001 mm. in length (Fig. VIII*b*). In the cells near the dorsal epidermis calcium oxalate crystals are as a rule wanting, although here and there a cell containing microcrystals may be found. Small rosettes of calcium oxalate from 0.005 to 0.010 mm. in diameter are not infrequent and usually occur in the more centrally located mesophyll cells (Fig. VII). In addition, the mesophyll cells of fresh specimens contain chloroplasts.

Adjacent or nearly adjacent to the ventral epidermis one or more rows of spiral tracheae occur (Figs. VI, VII and VIII*a*). These are more numerous near the base of the calyx and are usually entirely absent near the summit. It is interesting to note that the calcium oxalate crystals occur most abundantly in the vicinity of these tracheae.

The sepals are joined at the summit of the calyx, the mesophyll cells here being elongated (Fig. V).

THE PERICARP.

The seed is entirely surrounded by a very thin pericarp (Figs. II*d*, III, IV, V and VI, XI and XII). It consists of an epicarp and an endocarp, each consisting of a single layer of epidermal cells, resembling each other in size and contour. The undulate character of these cells is very pronounced, the cells varying from 0.050 to 0.080 mm. in length and from 0.010 to 0.020 mm. in breadth. In certain locations, especially near the veins, the third or mesocarp layer may be seen. This consists of a single layer of more or less regular, four-or-five sided angular cells, 0.010 to 0.020 mm. in diameter (Figs. XI and XII–2).

Spiral tracheae occur near the base of the pericarp being distributed along the veins and are of the same size and variety as those occurring in the calyx. In the vicinity of these tracheae cells containing microcrystals of calcium oxalate may be found. No stomata occur upon either the epicarp or the endocarp.

The epicarp (the surface adjacent to the ventral surface of the calyx) is covered with an abundance of glandular hairs (Figs. III, IV, X and XII). These

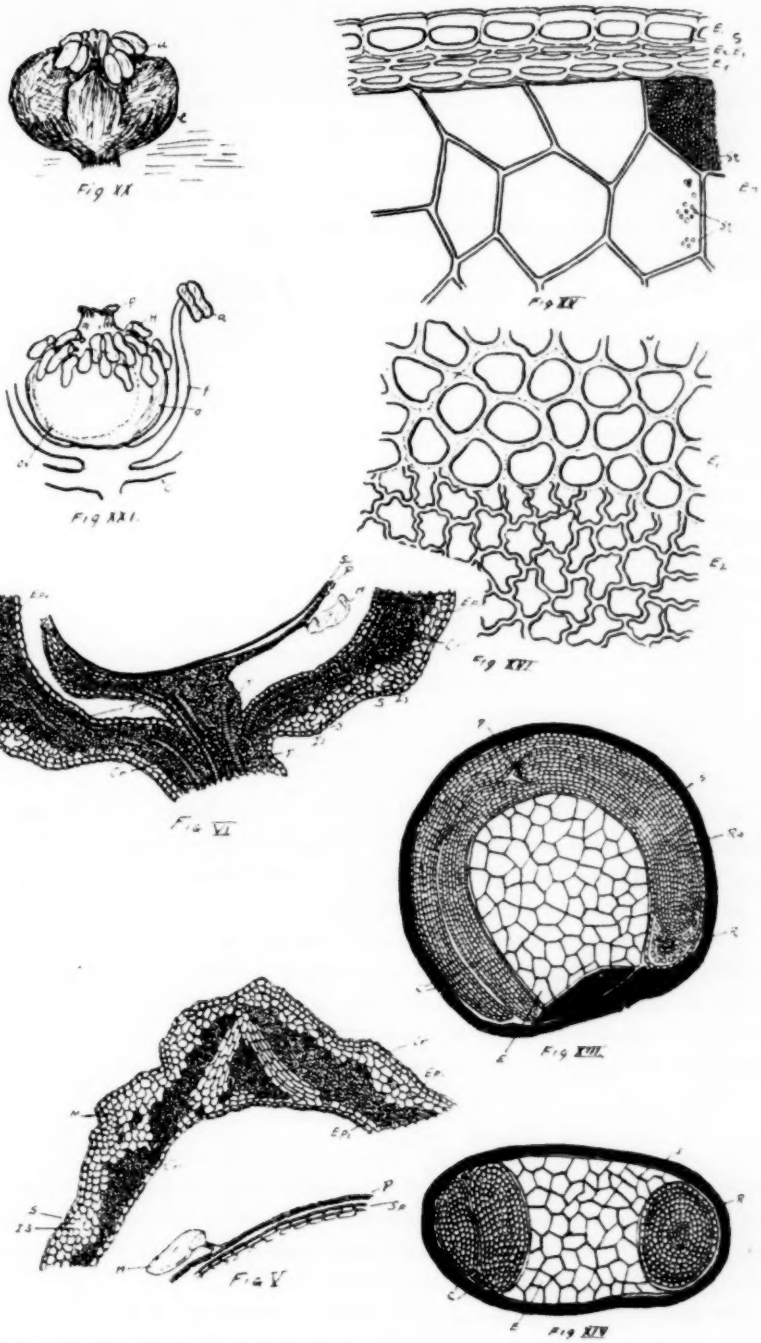

Fig. V.—Longitudinal Section through Summit of Calyx.

Fig. VI.—Longitudinal Section through Base of Calyx.—*Ep*$_1$, dorsal epidermis; *Ep*$_2$, ventral epidermis; ***M*, mesophyll cells; *Cr*, cells containing microcrystals; *R*, rosette of calcium oxalate; *S*, stomata; *Is*, intercellular spaces; *T*, tracheae; *Sp*, spermoderm of seed; *P*, pericarp; *H*, glandular hairs.**

Fig. XIII.—Cross Section of the Seed.—*S*, spermoderm; *R*, root of embryo; *Ra*, radicle; *P*, plumule; *C*, cotyledons; *E*, endosperm.

Fig. XIV.—Longitudinal Section through the Seed.—*S*, spermoderm; *R*, root of the embryo; *C*, cotyledons; *E*, endosperm.

Fig. XV.—Cross Section through the Seed-Coat and Endosperm.—*S*, seed-coat, showing four epidermal layers, *E*$_1$, *E*$_2$, *E*$_3$ and *E*$_4$; *En*, endosperm; *St*, starch.

Fig. XVI.—Surface View of the Seed-Coat, showing the two well-defined layers of cells *E*$_1$ and *E*$_2$.

Fig. XX.—Flower showing the anthers *a*, and the calyx *c*.

Fig. XXI.—Flower with calyx removed.—*o*, ovary; *ov*, outline of ovule; *p*, pistil; *h*, glandular hairs; *f*, filament; *a*, anther; *c*, calyx.

hairs are six or seven celled and vary from 0.050 to 0.200 mm. in length. The terminal cell forming the head of the hair is bladder-shaped and several times the size of the other cells. The cell adjacent to this is somewhat smaller but of the same general structure as the terminal cell. Both of these cells are thin-walled and as will be shown later contain the volatile oil. The stalk (of the hair) consists of four or five cells, these being small and thick walled. Fig. X illustrates various types of hairs.

MICROCHEMISTRY OF THE OIL.

Numerous microchemical tests for volatile oils were attempted in order to prove the location of the volatile oil in the plant. The more common of these are with alkanin, osmic acid, dilute solutions of fuchsine and aqueous solutions of copper acetate. None of these reagents, however, produced a successful reaction.

In 1907 Kremers[12] while saponifying the oil, observed a coloration upon the addition of alcoholic potash and heating. This, we found, could be developed into a very satisfactory microchemical test for the oil. The oil, if treated with a 5 percent solution of potassium hydroxide in 95 percent alcohol (previously freed from aldehydes by distilling over potash or soda), changes to a liquid of a deep yellow color. This gradually proceeds through various shades of orange to a deep red and finally to a dark reddish brown. If the reaction is allowed to take place at room temperature it requires from twenty to thirty minutes to complete the test; at 40 to 50° C., from ten to twelve minutes and at 60 to 70° C. the entire reaction is complete at the end of three minutes.

When thin sections are treated with the same solution, and examined under the microscope, the same reaction is observed to take place. The volatile oil, contrary to some of the older opinions,[13] is not contained in the seed but occurs only in the glandular hairs, and here only in the two larger, thin-walled terminal cells. The hairs pass through the same changes in color as the oil. By use of a thermal stage the reaction may be completed in a short time. The alcoholic potash has also a destructive action upon the cell walls, probably due to its reaction with the oil, causing them to become wrinkled and to shrivel, so that by the time the reaction is complete the cell is usually entirely collapsed.

THE SEED.

The seed is lentil shaped, jet black and shiny, varying from 0.8 to 1.2 mm. in diameter (Fig. II). The embryo is coiled almost entirely around the endosperm which is composed of parenchyma cells, entirely filled with small spherical starch grains. These grains rarely exceed 0.001 to 0.0015 mm. in diameter (Fig. XV). The endosperm also contains some fixed oil.

The testa (spermoderm), or seed coat, is composed of from two to four layers of cells. The outer epidermal cells are brown, thick-walled and have a heavy cuticle. The next layer or two (the tegmen) is composed of collapsed cells with yellow or brownish walls. By the use of Schulze's Macerating Solution (potassium chlorate and nitric acid) these cells may be isolated. The inner row of seed-

[12] *Pharm. Rev.*, 25, p. 155.

[13] Garrigues, *Amer. Jour. Pharm.*, 26, p. 405.

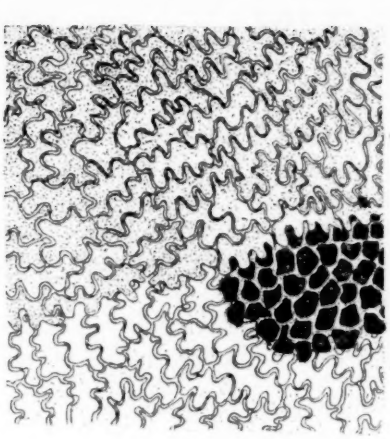

Fig XI.

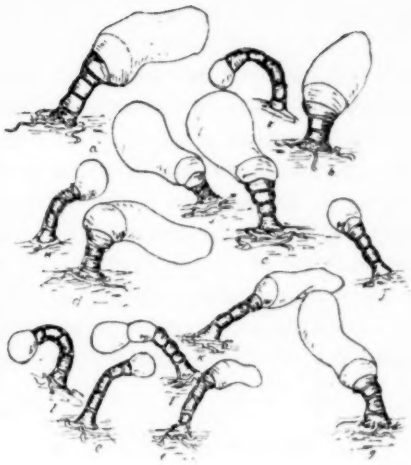

Fig X.

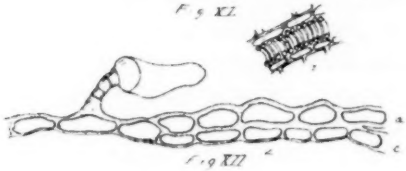

Fig XII

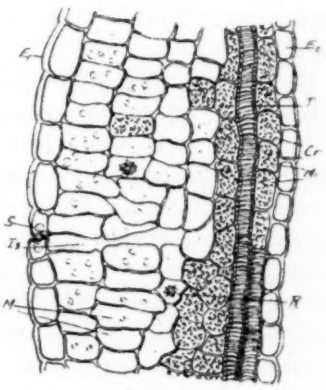

Fig VII.

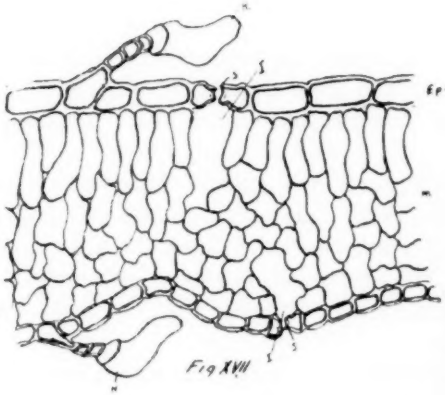

Fig XVII

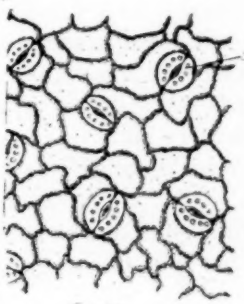

Fig IX

Fig VIII

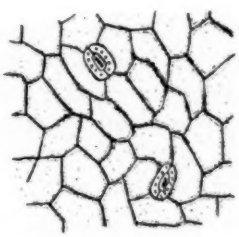

Fig XVIII

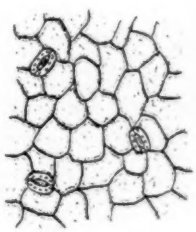

Fig XIX

Fig. VII.—Longitudinal Section through a Portion of the Calyx.—E_1, dorsal epidermis; E_2, ventral epidermis; *T*, tracheae; *Cr*, cells containing microcrystals; *Mi*, microcrystals of calcium oxalate; *R*, rosettes of calcium oxalate; *S*, stoma; *Is*, intercellular space; *M*, mesophyll cells.

Fig. VIII.—*a*, spiral vessel; *b*, microcrystals of calcium oxalate; *c*, rosette of calcium oxalate.

Fig. IX.—Dorsal Surface of the Calyx, showing stomata, *S*.

Fig. X.—Types of Glandular Hairs found upon the Surface of the Pericarp.

Fig. XI.—Surface view of the Pericarp, showing the two more common layers *a* and *c*, and the third layer *b*.

Fig. XII-1.—Tracheae found in the Pericarp.

Fig. XII-2.—Cross section of the Pericarp. *a* and *c* correspond to *a* and *c* in Fig. XI.

Fig. XVII.—Cross section of the leaf.—Ep_1, ventral epidermis; Ep_2, dorsal epidermis; *S*, stomata; *I*, intercellular space; *M*, mesophyll; *H*, glandular hair.

Fig. XVIII.—Surface, Ventral.

Fig. XIX.—Surface, Dorsal.

coat cells are well developed but show more or less of an undulate character, especially if viewed from the surface (Figs. XVI and XV).

Germination takes place in four or five days, upon filter paper under glass. The cotyledons emerge first and develop into ovoid forms. The first anatomical change in the embryo is the appearance of two rows of spiral tracheae, running from the root of the embryo, through the center of the hypocotyl and diverging in the vicinity of the plumule, each running into one of the cotyledons. Later rootlets appear along the base of the hypocotyl.

The time required for germination in soil is about five days. In three or four weeks the cotyledons wither and disappear and the first foliage leaves appear.

THE LEAVES.

The leaves[14] are also of some interest since oil-containing glandula. hairs of the same type as are found upon the pericarp occur upon both epidermal surfaces. Both the upper and lower epidermal layers are composed of a single layer of cells (Fig. XVII). The mesophyll cells contain microcrystals of calcium oxalate.

The ventral epidermal cells (Fig. XVII) are usually angular and from four to seven sided. Stomata are numerous upon the upper surface and vary in length from 0.025 to 0.035 mm., the neighboring cells being parallel to the pore of the stoma. The dorsal epidermal cells (Fig. XIX) are less angular than the ventral and somewhat smaller. The stomata are more numerous and resemble those upon the ventral surface in type and size, the neighboring cells, here also, being parallel to the pore.

Glandular hairs occur upon both surfaces of the leaf. These are of the same type as those occurring upon the surface of the pericarp, but as a rule are smaller, and much less numerous. The larger number of hairs, upon the leaf occurs upon the dorsal epidermis. Contrary to the statement made by Schimmel & Co.[15] that the leaf contains no oil, microchemical tests show that the hairs upon the surfaces of the leaf are oil-containing.

At the time of maturity and harvesting, the leaves have, in a large part, disappeared, so that the leaf can hardly be considered as important from the viewpoint of the yield of oil.

Several careful examinations failed to show the presence of glandular hairs upon the stem. This is of considerable importance in the practical distillation of the oil, as the stems can be rejected and the fruits and leaves only employed in the distillation, thus saving in the amount of material employed in one charge of the still.

THE FLOWER.

In order to verify the foregoing work upon the seed of Chenopodium an investigation of the flower was made. The flowers are minute, regular and greenish in color. The five lobes of the calyx (Fig. XX) are joined at least two-thirds from the base, and the five yellow anthers protrude through the opening at the summit of the calyx.

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[14] See description in introduction of this article.

[15] Schimmel & Co. Report, 1908, p. 111.

By removing the calyx the ovary may be examined. The upper half of the outer surface of the ovary is completely covered with a mass of glandular hairs. Microchemical tests (as well as the odor of the crushed flower) show these to contain oil.

It would be an interesting experiment which might bring to light some important facts, to distil the oil from the plants in the flowering stage. Such an experiment would at least tend to show whether the cymene present in the oil distilled from the fruits, was originally present, or was formed as a decomposition product of the ascaridol, upon the development of the fruit. There is, of course, the possibility that the oil in the flowers has a higher ascaridol content than that distilled from the plant at a later period. If this is true an important error lies in the time of distillation; in fact, none of the work upon the distillation of plant products should be conducted without a previous knowledge of the changes in structure of the ovary, and constituents of the oil, until the time of maturity of the fruit.

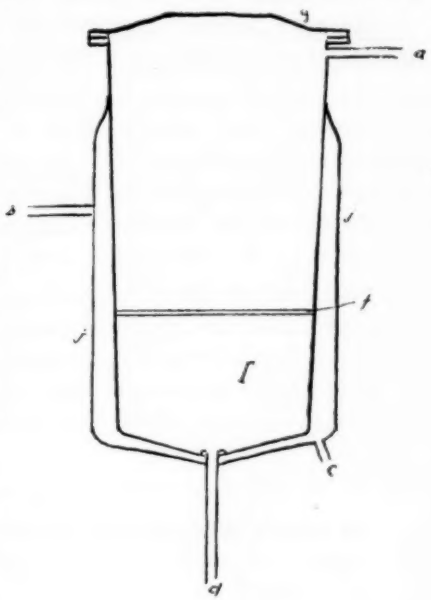


Fig XXII

Fig. XXII.—Type of Still Used.—*a*, upper compartment; *i*, lower compartment; *j*, steam jacket; *b*, inlet for steam to jacket; *c*, outlet for steam from jacket; *f*, fine mesh screening; *d*, inlet for steam to lower compartment; *a*, outlet to condenser; *g*, removable cover, for introduction of materials.

EXAMINATION OF THE WESTERN OIL OF CHENOPODIUM.

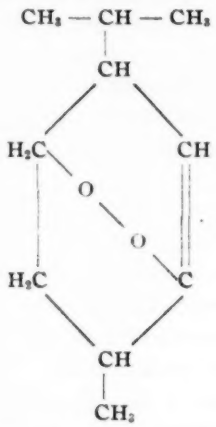
HISTORICAL AND THEORETICAL.

Oil of Chenopodium was first examined by Garrigues in 1854,[16] who reported the presence of two constituents, one a hydrocarbon boiling at 176° C and the other a liquid of the formula $C_{10}H_{16}O$. Later, in 1907, Kremers[17] examined the oil, and from its behavior upon saponification suspected the presence of an unstable alcohol. Schimmel & Co.,[18] in 1908, reported an investigation of the oil in which they reported the presence of *p*-cymene, *d*-camphor in small amounts and a liquid substance designated by them "ascaridol" on account of its pronounced action against ascarides. Analysis of ascaridol showed its molecular formula to be $C_{10}H_{16}O_2$. Ascaridol showed itself to be very unstable towards heat. Its behavior towards reagents which would characterize it as an alcohol, aldehyde, ketone or phenol, were absolutely indifferent. Schimmel & Co., also observed that when ascaridol is heated to 150° C it forms a conversion product having the formula $C_{10}H_{16}O_2$. Nelson[19] showed this same conversion product

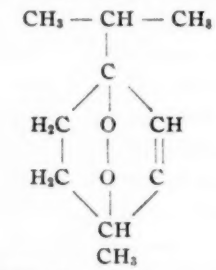
[16] *Amer. Jour. Pharm.*, 26, 405, 1854.
[17] *Pharm. Rev.*, 25, p. 155.
[18] Schimmel & Co. Report, April, 1908.
[19] *Jour. Amer. Chem. Soc.*, 33, p. 1404; *Ibid.*, pp. 35–84.

(a glycol) to be formed upon treatment of ascaridol with ferrous sulphate. Concentrated sulphuric acid or glacial acetic acid and zinc reduce ascaridol to cymene.

In 1911 Nelson[19] repeated the experiments of Schimmel & Co., and further investigated ascaridol to which he assigned the formula



In 1912 O. Wallach[20] also investigated ascaridol and assigned to it the formula



which was later verified by Nelson.[21]

EXPERIMENTAL.

The general opinion seems to be that "western" oil of Chenopodium is inferior to that raised in Maryland, appearing in commerce under the name of "Baltimore" oil. This opinion seems to be based upon an article written in 1854,[22] although Motter[23] claims that the "western" oil is no longer much of a commercial factor. We have investigated the oil distilled from plants raised in Michigan which falls under the "western" variety, with the point in view of comparing results with those of previous workers, whose investigations have in all cases been of the "Baltimore" variety.

DISTILLATION OF THE OIL.

The oil used for investigation was distilled from authentic specimens of *Chenopodium ambrosioides* var. *anthelminticum*, grown at the University of Michigan Botanical Gardens in 1918. The plants were harvested early in September

[20] *Ann.*, 392, p. 59.
[21] *Jour. Amer. Chem. Soc.*, 35, p. 84.
[22] *Amer. Jour. Pharm.*, 26, 503.
[23] *Public Health Reports*, Reprint No. 224.

and divided into two lots, one being dried in direct sunlight under glass, the other being shade-dried.

The question of distillation came up some time ago when it was observed that the relative specific gravity of oils upon the market was becoming lower. At this time Schimmel & Co.,[24] performed several experiments involving various methods of distillation. The distillation, as it has always been carried out in Maryland,[25] consists essentially of covering the herb with water and distilling, the oil coming over with the steam. After trying several methods Schimmel & Co., came to no definite conclusions as to the better method, but advise that the oil should be subjected to heat for as little time as possible.

The compound ascaridol, which Schimmel & Co., originally isolated, and which is believed by them to be the active constituent of the oil, is easily decomposed by the action of heat. Ascaridol has a specific gravity of approximately 1.0, while that of cymene is 0.86. The following experiment illustrates the effect of heat upon the specific gravity. The result is doubtless due to the decomposition of ascaridol.

Fifty cubic centimeters of the oil were gently boiled with 100 Cc of water under a reflux condenser. The results were as follows:

	Original oil.	After two hours' boiling.
$D_{(15.56°)}$	0.9343	0.9214
α_D 25° (100 mm. tube)	—6.21°	—7.47°

In order to cause as little change in the oil as possible it was distilled in the following manner: A copper still (Fig. XXII) with a capacity of 2 to 3 Kg. of fruits, equipped with a false bottom so arranged as to allow the passage of steam upward but to prevent any vegetable matter from falling into the lower compartment, was employed. The lower compartment had a capacity of from five to six liters, and was equipped with an inlet for steam. The entire still was surrounded by a copper jacket, through which superheated steam could be conducted. This was used as a source of heat. The condensing surface was small, the temperature of the distillate in the receiver being from 45° to 50° C.

The fruits from the sun-dried plants were stripped from the stems (which served to bruise them), and macerated with water for twenty-four hours. Three liters of water were placed in the lower compartment, and the moist fruits in the upper. When all of the water in the lower compartment was evaporated, steam of exterior generation was introduced. The flow of steam through the jacket was so regulated that no vapors evolved from the end of the condenser, the distillate in the receiver being about 45° C. The time of distillation was in every case less than one and one-half hours. This method of procedure eliminated (1) excess reflux action (prevented by the steam jacket surrounding the compartment containing the fruits); (2) unnecessary heating of the oil (which is apt to cause its decomposition, and gave (3) a better separation of the oil from the water (due to "hot-running" the distillate) as well as (4) a larger yield of oil (the bruising and macerating of the fruits allowing a more efficient escape of oil), and the (5) short period of

[24] Schimmel & Co. Report, April, 1908, p. 109.

[25] *Amer. Jour. Pharm.*, 22, p. 303.

subjection to heat prevented the decomposition of the oil which according to Schimmel & Co.,[26] is accompanied by the formation of non-volatile bodies.

Results of an average distillation were as follows: fruits (dried) 2000 grammes:

	Total distillate in Cc.	Oil in Cc.
Steam generated in still	500	9
	500	20
	500	12
	500	5
	500	2
Steam introduced	500	1
	500	0.5
	500	Neg.
Total	4000	49.5

49.5 × 0.93 (sp. gr. of oil) = 46.035 grammes of oil.
46 × 100 ÷ 2000 = 2.3 percent = yield of oil.
Total time of distillation, 1 hour, 20 minutes.
The oil obtained gave the following constants:

$D_{(15.56°)}$	0.9343
α_D (100 mm. tube) 25°	—6.21°
n_D 40°	1.4690

Not soluble in 10 volumes of 70 percent (by vol.) alcohol.
Soluble in 16 volumes of 70 percent (by vol.) alcohol.
This oil was employed in the chemical investigation.

The oil was distilled from the shade-dried plants in the same manner as described above, the yield being the same (2.2 percent to 2.5 percent), and the physical constants agreeing with those of the oil from the sun-dried plants. Shade drying or sun drying, then, has no effect upon the oil.

The oil thus obtained was redistilled with steam in laboratory apparatus, the first 70–75 percent and the last 25–30 percent being collected separately. 2–3 percent of non-volatile matter remained behind in the form of a resinous mass. The two fractions gave the following constants:

	First fraction.	Second fraction.
$D_{(15.56°)}$	0.9085	1.0002
α_D (100 mm. tube) 25°	—12.89°	—4.09°

The oil (from the sun-dried plants) having the following constants, $D_{(15.56°)}$ = 0.9343; α_D (100 mm. tube) 25° ≡ —6.21; n_D 40° = 1.4690, was fractionated under reduced pressure (8–10 mm.) and the following fractions collected:

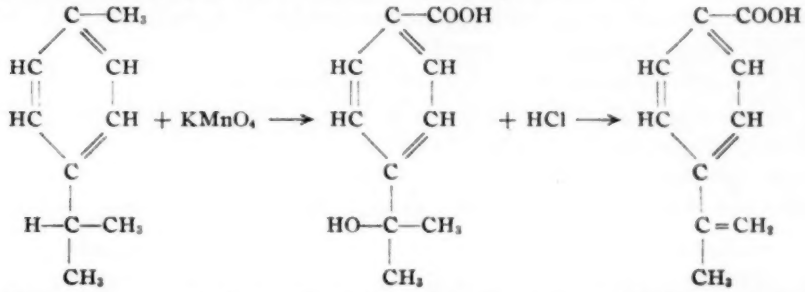
55–65° (35 percent)
$D_{(15.56°)}$ = 0.9116
α_D (100 mm. tube) 25° = —12.40°
n_D 40° = 1.4885

65–79° (14 percent)
$D_{(15.56°)}$ = 0.949
α_D (100 mm. tube) 25° = —7.40°
n_D 40° = 1.4860

80–102° (45 percent)
$D_{(15.56°)}$ = 1.005
α_D (100 mm. tube) 25° = —3.16°
n_D 40° = 1.4720

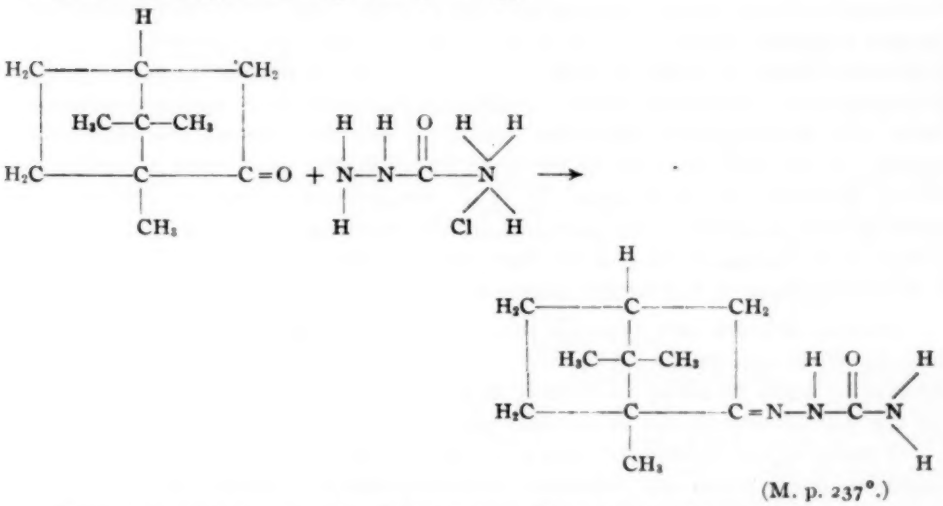
[26] Schimmel & Co. Report, April, 1908, p. 112.

The first fraction was redistilled over sodium and fractionated, that boiling between 174° and 176° being used. This liquid was shown to be *p*-cymene by oxidation in aqueous solution with potassium permanganate, filtering off the manganese dioxide, evaporating the filtrate to dryness, taking up in alcohol, evaporating the alcoholic extract and taking up the residue with water and finally precipitating with dilute sulphuric acid. *p*-Hydroxyisopropyl benzoic acid was formed which had the m. p. of 156°. This, when warmed with dilute hydrochloric acid, gave *p*-isopropenylbenzoic acid having a m. p. of 160° C.



Schimmel & Co. attribute the high optical rotation of this fraction to sylvestrene. We were unable, however, to obtain the acetic anhydride-sulphuric acid reaction for sylvestrene, either in this fraction or in the first runnings from the steam distillation of the "shade-dried" oil, which also had an abnormally high rotation.

Principally in the second fraction (66–79°), but also in the first, the presence of *d*-camphor was shown. The oil was treated with semicarbazid hydrochloride and sodium acetate in acetic acid solution, the mixture being allowed to stand for some time, and the oil and acetic acid removed with steam. This gave the semicarbazone of camphor having a m. p. of 237°.



(M. p. 237°.)

Since ascaridol has previously been investigated,[27] nothing further was done than to verify the compound forming practically all of the third fraction (80–102°).

[27] *Jour. Amer. Chem. Soc.*, 33, 1404, 1911; 35, 84, 1913; *Ann.*, 392, p. 59.

From the results of the following reactions it may be concluded that the compound agrees with ascaridol found by Schimmel & Co.,[28] and Nelson[29] in the Maryland oils.

(1) At 140–150° the compound decomposed with sudden boiling, and when allowed to drop upon mercury at 250° it decomposes with explosive violence and often bursts into flame.

(2) When treated with hot concentrated sulphuric acid it decomposes with explosive violence.

(3) When heated to 140 with phthalic anhydride it decomposes with violence. No phthalic ester, however, was found.

(4) It reacts with explosive violence with formic acid.

(5) With zinc dust and glacial acetic acid it forms cymene which may be identified by oxidation to *p*-isopropylbenzoic acid.

Other samples of the oil ($D_{(15.56°)}$ = 0.9343) were fractionated in order to determine the percent of ascaridol and cymene present, the average results being:

Ascaridol	42–45 percent
Cymene	42–44 percent

CONCLUSIONS.

The "western" oil agrees in composition with the Maryland oils, save in the amount of ascaridol which is present in the latter from 60 to 80 percent. Doubtless it is this low percentage of ascaridol which has caused the "western" oil to fall into disrepute.

Some methods, however, which might be used in bringing the oil up to standard, suggest themselves. The specific gravity of the oil obtained above, which is 0.934, falls below the standards of the United States Pharmacopoeia (IX), which requires a specific gravity of 0.955–0.980. It has been shown previously, that ascaridol is less volatile with steam than cymene. By steam distillation of the oil with a specific gravity of 0.934 it was separated into two fractions, *i. e.*, 70 to 75 percent having a specific gravity of 0.90 and 25 to 30 percent having a specific gravity of 1.00. The oil might be fractionated, in this manner, upon a commercial basis. Yet upon further calculation it may be seen that too large a waste is involved. If the two fractions above were mixed in the proportion 1 : 1 the resulting oil would be of minimum U. S. P. requirement in specific gravity, and would involve a waste of 40 percent. If the fractions were mixed in the proportion 4 of the second to 1 of the first, the resulting oil would be of maximum U. S. P. requirement, but would involve a waste of 60 to 62 percent.

Another method, less desirable than the one mentioned, would be to remove the majority of the cymene by distillation under reduced pressure. In either case, however, a waste of about 50 percent of the oil would be involved which would put the matter entirely out of the question commercially.

A more logical method of attack would be a study of the climatic and soil conditions under which the "western" plant is grown as compared with the other. As previously mentioned, interesting results might be obtained by distilling the

[28] Schimmel & Co. Report, April, 1908, p. 114.

[29] *Jour. Amer. Chem. Soc.*, 33, 1404, 1911.

oil from the plant before maturity. It is, however, as shown above, impracticable to bring the "western" oil up to standard, due to the waste involved.

FREDERICK STEARNS AND COMPANY,
FELLOWSHIP IN PHARMACY,
UNIVERSITY OF MICHIGAN,
COLLEGE OF PHARMACY, 1919.

A SKETCH OF THE MEDICAL HISTORY OF DRAGON'S BLOOD."

BY TORALD SOLLMANN.[1]

"Dragon's Blood," Resina Draconis, receives very scant mention in modern works. Schmiedeberg refers to it as slightly astringent. The U. S. Dispensatory states that it was formerly employed in medicine as astringent, but that it is nearly or quite inert. The British Pharmaceutical Codex describes it as used mainly for coloring lacquers and varnishes. These statements refer to the East Indian or Sumatran resin.

It is evident that the "Dragon's blood" is now used solely as a coloring matter, and that it has lost whatever reputation it may once have possessed as a drug. The vicissitudes in the reputation of Dragon's blood are, perhaps, explained by the fact that the name "Dragon's blood" has been applied to a variety of red resins; and as the 1790 edition of the Edinburgh Dispensatory states:

"For even supposing some of these red-colored resins sold under this name to possess medical properties, yet it can hardly be imagined that all resins of this color have the same properties."

Different Drugs Named Dragon's Blood.

The following sources of distinct varieties of the drug are compiled from the U. S. Dispensatory, British Pharmaceutical Codex, Hager, and Flueckiger and Hanbury.

1. *East Indian Dragon's Blood.*—This is the ordinary variety of commerce; a resinous exudation from the surface of the fruit of a number of small palms of the genus *Daemonorops*, formerly Calamus; growing in the East Indies, Malays, Sumatra and Borneo. The species differ with the localities. It occurs in commerce as "tears," of the size of a hazelnut to that of a walnut; as the familiar "sticks" or "reeds;" and as large "lumps."

2. *Socotran or Zanzibar Dragon's Blood.*—Derived from *Dracaena Cinnabari* or schizantha, a large tree of Somaliland. Occurs as tears. Only small quantities reach the markets.

3. *Canary Dragon's Blood.*—Derived from *Dracaena Draco*, a liliaceous tree resembling the Yucca. Gathered from incisions of the trunk. Not found in commerce.

4. *West Indian Dragon's Blood.*—Exudation from *Pterocarpus Draco* (Papilionaceae?).

5. *Mexican Dragon's Blood.*—From *Croton Draco.*

6. *Venezuelan Dragon's Blood.*—From *Croton gossypifolium.*

The East Indian varieties are practically alone in the market, at this time; but they were unknown until the 16th century.

Dragon's Blood up to that time was the African and Canary variety. During the 18th and early 19th centuries, the medical descriptions often apply to the American varieties.

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[1] From the Department of Pharmacology, Medical School, Western Reserve University, Cleveland.

Ancient and Antiquated References to the Sources of Dragon's Blood.—Flueckiger and Hanbury state that the Kinnabari of Dioscorides and Pliny was the Socotrine dragon's blood.

Rhaenodaeus, in his Dispensatory, published between 1600 and 1657, gives the following interesting account. He dismisses the notion, apparently still current, that the drug is the "Blood of a Dragon animate, smitten by an Elephant;" and accepts the statement of one Cadamustus, that it is the resin exuding from incisions in a tree of the Canaries, *i. e.*, the typical Canarian Dragon's Blood.

"Of Dragons-Blood.

"The pervestigation of Dragons-Blood hath exercised many wits; for some following the erroneous opinion of Pliny, think that it is the Blood of a Dragon animate, smitten by an Elephant, which errour Solinus doth not only embrace, but holds that Cinnabaris is that same which Apothecaryes call Dragons-Blood. Serapio writes, that it is the succe of a certaine Plant, which he calls Sydrichis and Egilos, which our Herbalists think is the fourth species of Wallfage, some ignorant Apothecaryes are imposed upon by circulators, and buy a kind of businesse tincted with red Earth, and the juice of Madder, and such things, convolved into lumps, for Dragons-Blood.

"Brassavolus foolishly constitutes three sorts of Dragons-Blood: the first factitious of pseudobole; the second the lacrymae of certaine Tree; the third Gumme. But as the adulterate is no species of Dragons-Blood; so neither can there be two sorts, the one a Lacryma, the other a Gumme of the same Tree, for all Gumms lacrymously distilling from any Tree, are called generally lacrymae.

"Aloysius Cadamustus a noble Venetian, expresses its Originall better; There is (saith he) in an Island called Pontus Sanctus, which is one of the Canaryes, Dragons-Blood, which is the Lachryma of a certaine Tree; which at a certaine season the incolists sauciate, out of which incisions the next years Gumme will emanate, which they coct in kettles, and defaecate making thereof Dragons-Blood. That Tree beares fruits like Cherryes in March, which are of an eximious sapour, and Venetian colour.

"Nic. Monardus seems to assent to this opinion, and asserts that Dragons-Blood is the lachryma of some Tree, and not the Goare of any animall; for (saith he) a few days agoe, a Carthaginian Bishop brought hither, from the continent of the new World, some of the fruit of that Tree, which emitts that Lacryma we call Dragons-Blood.

"The fruit is very admirable; for the skin wherewith it is covered being taken away, a little Dragon appeares of such artificial yet naturall fabricature, that the most perite artist cannot better ingrave it in Marble; it is conspicuous with an oblong neck, a gaping mouth, an aculeated back-bone, a long tayle and feet.

"From this fruit both the Tree and its Lacryma derived their names, that is best which is brought from Carthage.

"The Tree is tall, with a thin barke, and easily vulnerable, whose name being unknown to the ancients, they wrote no certainty of the nature and originall of its Lacryma, Clusius saw the Tree and described it accurately.

"Dragons-Blood then, is the name both of an exoticall Tree, and the hard purpureous Gumme concreted on its boughs.

"It is collective and agglutinatory, and, therefore fitt to conjoyn wounds, and astringe and roborate laxe parts: it may easily be dissolved in water."

The failure of Rhaenodaeus to mention the East Indian variety bears out the statement of Flueckiger and Hanbury that this drug was apparently unknown at the time. They quote the first clear description of the East Indian variety as of 1747.

This is antedated by the Mexican drug, for this is the variety described in Strother's Materia Medica of 1727. Strother considers this as the Cinnabar of Dioscorides; but forgets to explain how Dioscorides had access to the Mexican drug.

"Sanguis Draconis, Dragons Blood,

"Is of a vicious and gently astringent Taste. It flows from the Trunk of a Mexican Tree call'd Draco, which they wound. It is as red as Cinnabar.

"As to its Virtues it binds and is yet heating, because it will flame when a Candle is put to it. It agrees in Fluxes of the Belly, and it is also vulnerary both inwardly and outwardly.

"It is a resinous, gummy, red Substance, reduc'd into a Mass: It cures all Fluxes of Blood beyond Expectation in a very short time; it is reckon'd the Cinnabar of the Ancients, and the Cinnabar is reckon'd the Minium we now have, according to Dioscorides.

"It is us'd by the Moderns, namely, by Goldsmiths and Jewellers, to make Jewels and Stones look cleaner and more shining, in Powder.

"N. B. It is taken from the Trunk of the Draco, wounded during the heat of the Dog-Days, and it drops out like Blood, and hardens. It hardly communicates its Colour to Water, but to Oil and Spirit of Wine it gives an elegant Tincture. It is us'd in Vomiting of Blood or any Fluxes; it may be prescribed thus,

"Take Plantane Water four Ounces, Cinnamon Water six Drams, Spirit of Vinegar half an ounce, red Coral prepar'd half a Dram, Balaustine Flowers and Dragons Blood of each half a Scruple, Laudanum Opiatum two Grains, Syrup of Mirtles one Ounce; mix and make a Mixture, of which a Spoonful often in Spittings or Vomitings, or Stools of Blood.

"Some affirm it will give Glass a Crimson Colour.

"Its Preparations are a Tincture with Spirit of Wine, which is good in either the simple or virulent Gonorrhoea, in Fluxes, a Bloody Flux and in all Fluxes whatever, whether of Blood or Humors, and in healing Wounds. Its Dose is a Scruple to a Dram.

"It does not agree in Clisters, because it settles to the Bottom."

The East Indian variety evidently established itself rapidly, once it had been introduced; for the Edinburgh New Dispensatory of 1790 states it as the main variety; but mentions other sources for instance pterocarpus draco (the West Indian variety). It also points out the existence of "articles of artificial composition," some of which were soluble in water.

Coxe's American Dispensatory of 1818 describes first the West Indian (Pterocarpus Draco); but mentions that most comes from the East Indies. He also makes the illuminating statement that Kino was first imported as "the finest dragon's blood."

Murray, 1821, describes only the Pterocarpus variety.

Older Statements as to Actions and Uses.

The quotation from Rhaenodaeus shows that in the 16th century Dragon's Blood was reputed to be astringent; but from his further statement that "it may easily be dissolved in water," it is very evident that his statement could not be applied to the East Indian drug.

Strother (1727), according to the quotation, describes Mexican Dragon's Blood as a gentle astringent and styptic; useful against "vomiting of blood or any other fluxes," bloody stools; gonorrhea, etc. As he prescribes it by mouth, against all of these conditions, his interpretation of its efficiency must be viewed with some skepticism. However, he states that it (the *Mexican* drug) has a "gently astringent taste," which is quite lacking in the East Indian drug. It is conceivable that the Mexican drug was somewhat astringent. At that time, and till much later, it was assumed that astringent actions extended also to tissues at a distance; a deduction that was quite natural in view of the difficulties of interpreting the efficiency of drugs in arresting hemorrhage, or "other fluxes."

From about this time, however, its reputation appears to have waned markedly. The Edinburgh New Dispensatory (1790) states "it is sometimes, but without foundation, looked upon as a gentle astringent" and was used in gleet, etc.

These indictions agree evidently with those ascribed by Strother to the Mexican drug; although the Dispensatory describes chiefly the East Indian drug.

Wm. Cullen, 1799, enumerates Dragon's Blood (variety not stated) among the astringents; but in view of its insolubility in watery fluids, he considers that it must be inert. He concludes "We are therefore, upon the whole, clear that it should be expunged from our materia medica list."

Coxe in his American Dispensatory (1818) quotes Duncan that neither the Calamus nor the Pterocarpus drugs precipitate gelatin, nor do they color with iron, and for these reasons cannot be astringent. He mentions Proust as the principal advocate of its astringent action; but points out that Proust's drug was water-soluble, and therefore not Dragon's blood at all. It may possibly have been a variety of Kino, which was first brought to the attention of Fothergill as "the finest variety of Dragon's Blood."

Murray, 1821, describes the West Indian (Pterocarpus) drug as entirely discredited.

"Though it has been considered an astringent, it has no such power, nor is it now applied to any medical use."

The drug does not seem to have attained any reputation among the Eclectics; for King and Newton in their Dispensatory of 1852 state of Calamus Draco: "Formerly considered an astringent and used in doses from 10 to 30 grains in passive hemorrhage, diarrhea, etc."

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THE MICROSCOPICAL IDENTIFICATION OF MOWRAH MEAL (BASSIA) IN INSECTICIDES.*

BY GEO. L. KEENAN.

I. INTRODUCTION.

In the course of the microscopical examination of various insecticides for the Insecticide and Fungicide Board it was observed that Mowrah Meal was being employed in products designated as ant and worm eradicators. As this is the first time that this material has been detected in insecticides or substances repre-

* Contribution from Insecticide and Fungicide Board and Bureau of Chemistry, Department of Agriculture, Washington, D. C.

sented to be used as such, it is deemed advisable to describe the histological features of this material as they appear in powdered form.

II. The Uses of Mowrah Meal.

The use of Bassia seeds for the large amount of oil which they contain has been known for some time. The seeds of the various species of Bassia trees, said to be widely distributed[1] in the Northern Provinces of India and especially in Bengal, are all known to be quite rich in oil which is expressed for technical purposes. The kernels of *Bassia latifolia*, for instance, are reported[5] to contain as much as 45.7 percent of oil. Lewkowitsch[5] states that Mowrah Seed oil is obtained from the seeds of *Bassia latifolia* and is an important article of commerce. It has been used in a number of ways, as an illuminating oil, in soap and candle making, as an ointment for the skin and also as an adulterant of ghi. This paper, however, is not so much concerned with the oil obtained from the seeds as with the residue remaining after the expression of the oil. This seed residue is known by various names, among them being Mowrah, Mahwa, Madhuca and Mahua Meal. Kesava-Menon[3] states that the oil cake is used to poison fish and the smoke from burning it is said to kill insects and rats. According to Lewkowitsch[5] Mowrah seed cakes are poisonous and can only be used as manure, although attempts have been made to render them edible.

III. Morphological Description of *Bassia latifolia* Rxb.

Honcamp and his associates[4] describe *Bassia latifolia* Rxb. quite in detail morphologically and the description to follow will consist partially of material drawn from that source. This tree is botanically a member of the Sapotaceae and is widely distributed in India, especially in Bengal, where it is associated with other species of Bassia. The tree possesses leathery leaves and the branches are crowded with flowers. The flowers[2] are said to taste like raisins and are either eaten raw by the natives or cooked with rice. They are also employed in making an intoxicating liquor, the residual liquid from which acts as an emetic. According to Roxburgh,[1] the tree is of average size, the leaves being deciduous during the cold season, and appearing again with the flowers in March and April. The seed ripens in July and August. The trunk is straight but short and covered with smooth, ash-colored bark. The leaves are alternate, petioled, crowded about the extremities of the branches, oblong, rigid, smooth above, somewhat whitish below; they are from four to eight inches long, and from two to four broad. The fruit consists of a berry about the size of a small apple and contains from one to four seeds, very rarely more.

IV. Microscopical Examination of Bassia-Seed Meal.

In the ant and worm eradicator powders in which Bassia-seed meal has been found it has existed in the form of a powder consisting of a mixture of fine as well as coarse material from the cotyledons and also fragments of the yellowish husk from the seed. In other respects, the material microscopically very much resembles cocoa powder, although not so uniformly pulverized. Honcamp[4] has so thoroughly described the histology of the seed of *Bassia latifolia* Rxb. that it hardly seems necessary to repeat in detail this part of the work. However, for a proper interpretation of the elements found in the seed powder, it will be necessary to give at least a brief description of the histology of the seed. For a more detailed

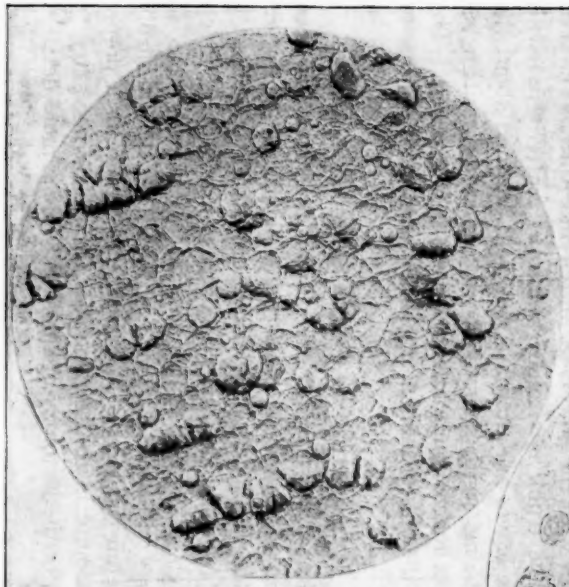

Fig. 1.

Cross-section of Cotyledon showing yellowish-brown cells in groups.

(X90)

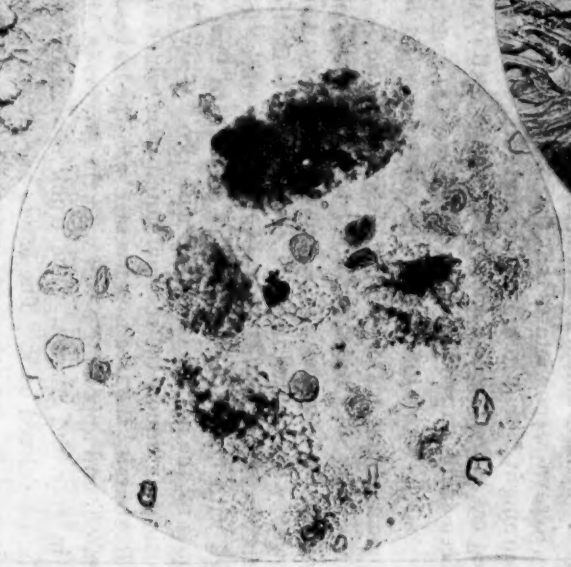

Fig. 3. Powdered Bassia-Seed Meal showing the dark particles. (X90)

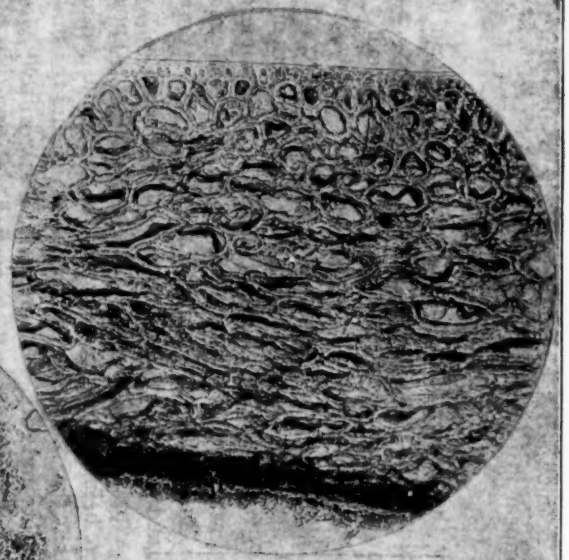

Fig. 2.

Cross-section of seed-coat.

(X120)

description the reader is referred to Honcamp's paper.[4] The seeds are somewhat almond-shaped and measure from 2 to 3 cm in length, being light brown in color. There are two cotyledons, these being reddish brown and of an oily consistency. The cotyledons which compose the bulk of the powdered seed-cake, consist of polyhedral cells, many of which contain yellowish brown material. These colored masses are arranged in quite characteristic groups throughout the lighter colored tissue of the cotyledon. Near the exterior of the cotyledon these cells appear to occur in larger aggregates. In order to satisfactorily examine the powder microscopically it is well to mount the material in chloral hydrate solution (1 : 1) on a microscopic slide and gently warm the preparation for the purpose of clearing the tissues. The most characteristic elements which immediately attract the eye are the yellowish brown colored cells from the cotyledons. These cells stand out distinctly in the surrounding tissue. They also occur separately as isolated fragments or in groups (Fig. 1.) Aside from these colored cells, the other tissues of the cotyledon do not appear to be sufficiently distinctive for diagnostic purposes as far as the powdered seed is concerned. These colored cells appear to be rich in tannin, a fact which can be readily demonstrated by the use of iron sulphate solution. This reagent turns them black. Fragments of the seed-coat can be readily picked out of the seed powder and cross-sections of them made (Fig. 2). This cross-section does not reveal tissue elements especially diagnostic and the seed-coat is very seldom found pulverized in the powdered material from the cotyledons. The epidermal cells from the seed coat have thick walls and the cells are quite compactly arranged. The bulk of the tissue consists of cells which are somewhat collapsed and contain a reddish brown material. The other edge of the section shows the remains of the spiral vessels which seem to form a network over the cotyledons. The yellowish brown cells of the cotyledon, isolated and in characteristic groups, are quite the most diagnostic elements whereby the analyst may identify the powdered material with certainty under the microscope.

SUMMARY.

This investigation calls attention to the use of Bassia-seed meal in so-called ant and worm eradicators and the diagnostic tissues relied upon for its microscopical identification when in powdered form. The ground meal very much resembles cocoa powder in general appearance, consisting largely of the powdered cotyledons and occasional fragments of the seed-coat. A microscopical examination of the powder in chloral hydrate solution reveals the presence of yellowish brown masses occurring separately as isolated fragments and also in a characteristic group arrangement. These tissues are quite diagnostic enough for the positive identification of the powdered material microscopically.

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NOTES ON THE PRECIPITATION OF MAGNESIUM HYDROXIDE.*

BY ROBERT WOOD TERRY AND EDWARD D. DAVY.

These notes are a partial study of the chemistry of the precipitation of magnesium hydroxide with particular reference to the manufacture of "milk of magnesia" by the precipitation process, using magnesium sulphate and sodium hydroxide as the basic materials.

Each experimental lot consisted of quantities sufficient to make 100 mils of finished magma and both the magnesium sulphate and sodium hydroxide solutions were diluted to 400 mils and mixed in the manner noted in the tables; this is the same concentration directed by the National Formulary III. This concentration was carried on throughout the experiments except where otherwise indicated in the tables

Practically every condition which usually affects the physical condition of precipitates has been given some study; some conditions more than others, according to the importance attached to them.

To more thoroughly understand the objects of these experiments a few desirable qualities of milk of magnesia will be enumerated:

Desirable Qualities of Milk of Magnesia.

First.—Reasonable uniformity in the percentage of magnesium hydroxide in the finished preparation.

Second.—Freedom from injurious foreign substances or undesirable by-products—heavy metals, arsenic, foreign alkalinity, and sodium and magnesium sulphates.

Third.—A non-separating magma, for the sake of pharmaceutical elegance only, a condition which is probably unobtainable.

Fourth.—Maximum fineness of the magnesium hydroxide and still retain fluidity of the preparation; this property is particularly desirable when milk of magnesia is to be used in infant feeding, where it is given more for its alkalinity than its laxative properties. It is axiomatic that the more surface of the magnesium hydroxide exposed to the milk the more rapidly will they react with each other. The importance of this last point may be understood by the fact that unmodified cows' milk is not readily digested by an infant unless its acidity is reduced by alkalies which produce a digestible curd. Cows' milk is about six times as acid as human milk; that is, cows' milk has 18 degrees acidity whereas human milk has only three.(1) To be useful in this respect the milk of magnesia must reduce the acidity before the milk enters the stomach. When cows' milk and milk of magnesia are mixed in the proper proportions to reduce the cows' milk to 3 degrees acidity it requires over six hours' contact. At 38° C. this is accomplished in about 35 minutes.

Some manufacturers advertise that their milk of magnesia is snow-white—this is a distinct disadvantage. The more opaque the milk of magnesia is, the less therapeutically active it is in any given time. The more translucent milk of magnesia is, the more desirable it is from a therapeutic standpoint.

Bearing these facts in mind and particularly the degree of fineness of the precipitate, the writers have endeavored to throw some light on the procedures required to produce as fine a preparation from a therapeutic and pharmaceutical standpoint as can be expected.

A series of experiments was performed as follows:

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* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., New York meeting, 1919.

Series No. 1.—$MgSO_4$ into NaOH.

Part A—25° C.—$MgSO_4$[1] in excess—50–25–10%. Theoretical proportions, NaOH in excess—10–25–50%.

Part B—50° C.—$MgSO_4$ and NaOH in 10 percent excess and theoretical proportions.

Part C—100° C.—Same as Part B. (Nos. 1 to 13 inclusive.)

Series No. 2.

Same as Series No. 1, except NaOH into $MgSO_4$. (Nos. 14 to 26 inclusive.)

Series No. 3.—Solutions Double Concentrated.

Part A—25° C.—$MgSO_4$ and NaOH in 10 percent excess and theoretical proportions.

Part B—50° C.—Same as A.

Part C—100° C.—Same as A. (Nos. 27 to 35 inclusive.)

Series No. 4—25° C.

Part A.—Same as Series No. 3, Part A, except solutions double dilute. (Nos. 36 to 38 inclusive.)

Series No. 5—25° C.

Part A.—Same as Series No. 3, Part A, except magnesium sulphate solution double concentrated. (Nos. 39 to 41 inclusive.)

Series No. 6—25° C.

Part A.—Same as Series No. 3, Part A, except sodium hydroxide solution double concentrated. (Nos. 42 to 44 inclusive.)

By studying the various parts of Table I, which shows the degrees of fineness of the magnesium hydroxide as produced from the above series of experiments (value column), it will be noted that slight modification of some conditions materially affects the product. The value figures represent the height of the precipitate in millimeters after standing ten hours in a Nessler tube. The higher the number the more gelatinous the precipitate. For these experiments it was necessary to assume that the ratio in the speed of separation during the first ten hours will hold for any length of interval.

No experiments were performed on the U. S. P., or hydration process, as it has been shown that these procedures are not as valuable as the precipitation method.(2) A few experiments were performed using for the alkali potassium hydroxide and ammonium hydroxide. The potassium salt has no distinct advantage over the sodium salt, therefore, it would not prove popular, as it would increase the cost. Due to the solubility of magnesium hydroxide in ammonium hydroxide this substance is worthless.

The reaction is based on the following equation and the stoichiometric calculations were based on the atomic and molecular weights of the U. S. P. IX.

$$\underset{246.50}{MgSO_4.7H_2O} + \underset{80.02}{2NaOH} = \underset{58.34}{Mg(OH)_2} + \underset{142.07}{Na_2SO_4} + \underset{126.11}{7H_2O}$$

[1] Wherever the symbol "$MgSO_4$" or the title "magnesium sulphate" appears in this paper it refers qualitatively and quantitatively to "$MgSO_4.7H_2O$" Mol. Wt. 246.50.

TABLE I.—SEPARATING VALUE OF MAGMAS.

Part A.—Magnesium Sulphate Solution Poured into Sodium Hydroxide Solution.

No.	Constituent in excess.	Percent excess.	Temp. ° C.	Value.
1	Magnesium Sulphate	50	25	146
2	Magnesium Sulphate	25	25	138
3	Magnesium Sulphate	10	25	107
4	Theoretical Proportions	..	25	65
5	Sodium Hydroxide	10	25	70
6	Sodium Hydroxide	25	25	106
7	Sodium Hydroxide	50	25	168
8	Magnesium Sulphate	10	50	178
9	Theoretical Proportions	..	50	122
10	Sodium Hydroxide	10	50	60
11	Magnesium Sulphate	10	100	183
12	Theoretical Proportions	..	100	126
13	Sodium Hydroxide	10	100	96

Part B.—Sodium Hydroxide Solution Poured into Magnesium Sulphate Solution.

No.	Constituent in excess.	Percent excess.	Temp. ° C.	Value.
14	Magnesium Sulphate	50	25	176
15	Magnesium Sulphate	25	25	215
16	Magnesium Sulphate	10	25	101
17	Theoretical Proportions	..	25	93
18	Sodium Hydroxide	10	25	92
19	Sodium Hydroxide	25	25	90
20	Sodium Hydroxide	50	25	90
21	Magnesium Sulphate	10	50	85
22	Theoretical Proportions	..	50	94
23	Sodium Hydroxide	10	50	107
24	Magnesium Sulphate	10	100	117
25	Theoretical Proportions	..	100	110
26	Sodium Hydroxide	10	100	111

Part C.—Double Concentration of both Solutions. Magnesium Sulphate Solution Poured into Sodium Hydroxide Solution.

No.	Constituent in excess.	Percent excess.	Temp. ° C.	Value.
27	Magnesium Sulphate	10	25	94
28	Theoretical Proportions	..	25	59
29	Sodium Hydroxide	10	25	58
30	Magnesium Sulphate	10	50	100
31	Theoretical Proportions	..	50	98
32	Sodium Hydroxide	10	50	61
33	Magnesium Sulphate	10	100	115
34	Theoretical Proportions	..	100	197
35	Sodium Hydroxide	10	100	75

Part D.—Double Dilution of both Solutions. Magnesium Sulphate Solution Poured into Sodium Hydroxide Solution.

No.	Constituent in excess.	Percent excess.	Temp. ° C.	Value.
36	Magnesium Sulphate	10	25	118
37	Theoretical Proportions	..	25	120
38	Sodium Hydroxide	10	25	166

Part E.—Magnesium Sulphate Solution Double Concentrated. Magnesium Sulphate Solution Poured into Sodium Hydroxide Solution.

No.	Constituent in excess.	Percent excess.	Temp. ° C.	Value.
39	Magnesium Sulphate	10	25	142
40	Theoretical Proportions	..	25	73
41	Sodium Hydroxide	10	25	73

Part F.—Sodium Hydroxide Solution Double Concentrated. Magnesium Sulphate Poured into Sodium Hydroxide Solution.

No.	Constituent in excess.	Percent excess.	Temp. ° C.	Value.
42	Magnesium Sulphate	10	25	78
43	Theoretical Proportions	..	25	75
44	Sodium Hydroxide	10	25	101

A few salient facts will be noted by Table I, Part A:

1. The greater the excess of magnesium sulphate the more gelatinous the precipitate.

2. When the magnesium sulphate is in 10 percent excess the gelatinization rises with the temperature. When the sodium hydroxide is in excess the temperature makes little difference. Theoretical proportion figures also rise with the temperature.

Part B, 1.—No definite generalization can be noted from the data.

Part C, 1.—By comparing the Nos. in part C with the corresponding ones in Part A it will be noted that the general effect of concentrating solutions is to decrease gelatinization.

Part D, 1.—By double dilution of both solutions the gelatinization is increased in every case.

In general, the more gelatinous precipitate is produced when the solutions are dilute and the temperature high. An excess of magnesium sulphate seems to produce a more gelatinous precipitate than when the sodium hydroxide is in excess. To account for all conditions it is necessary to study the tables carefully.

The densities of the supernatant liquids do not vary enough to materially affect the separation value. The densities varied from 1.010 to 1.015.

Another factor affecting the degree of gelatinization is the rapidity of mixing the solutions. Contrary to what might be expected the more rapidly the solutions are mixed the better the magma produced.

Table II gives analyses of the supernatant liquids from the different magmas, showing the adsorption of magnesium sulphate by the magnesium hydroxide. Each lot was diluted to 1002 mils and an aliquot portion analyzed. By diluting to 1002 mils, 100 mils will represent exactly one-tenth of the supernatant liquid, the 2 mils being the volume occupied by 5.9 Gm. magnesium hydroxide (specific gravity 2.84[3] as produced under average conditions).

$$\text{Volume} = \frac{\text{Mass}}{\text{Density}}$$

In one case 1.2 percent of the total magnesium hydroxide consisted of magnesium sulphate held by adsorption. In all cases where the alkali was in excess

[3] Van Nostrand's "Chemical Annual," 1918, gives specific gravity of $Mg(OH)_2$ as 2.36 at 15° C.

all the magnesium sulphate was precipitated, consequently none was adsorbed. There was no adsorption of sodium hydroxide under any of the conditions mentioned. Wherever the alkali was in excess the supernatant liquid required very close to the theoretical amount of standard acid for neutralization. This disproves the contention that an excess of magnesium sulphate is more easily washed out than an excess of alkali. It would seem that a slight excess of sodium hydroxide is to be preferred in the manufacture of this preparation by the retail pharmacist, who cannot assay his alkali, and base his calculations accordingly. One who is equipped for assaying may select his method, provided, of course, the finished product meets the official requirements.

TABLE II.—ADSORPTION OF MAGNESIUM SULPHATE AND SODIUM HYDROXIDE BY THE MAGNESIUM HYDROXIDE.

Part A.—Magnesium Sulphate Solution Poured into Sodium Hydroxide Solution.

NOTE.—In the following table under "Constituent in excess," Magnesium Sulphate has been abbreviated "Mg. S.," and "Theoretical Proportion, T. P."

No.	Constituent in excess.	Percent. excess.	Temp. ° C.	Mils. Sample.	$Mg_2P_2O_7$.	Adsorbed. $MgSO_4.7H_2O$.[1]	Mils. Sample.	N/10 H_2SO_4. required.	N/10 H_2SO_4. Theoretical.
1	Mg. S.....	50	25	50	0.2740	3.6750	100	0.55	None
2	Mg. S.....	25	25	50	0.1298	5.040	100	0.55	None
3	Mg. S.....	10	25	100	0.0941	4.170	100	0.55	None
4	T. P.....	..	25	100	0.0034	Trace	100	2.20	None
5	NaOH.....	10	25	100	0.0041	Trace	25	5.10	5.07
6	NaOH.....	25	25	100	0.0036	Trace	25	12.74	12.64
7	NaOH.....	50	25	100	0.0025	Trace	25	25.10	25.36
8	Mg. S.....	10	50	50	0.0566	None	100	0.95	None
9	T. P.....	..	50	100	0.0143	None[2]	100	2.45	None
10	NaOH.....	10	50	100	0.0000	None	25	4.30	5.07
11	Mg. S.....	10	100	50	0.0538	1.1800	100	1.00	None
12	T. P.....	..	100	100	0.0010	Trace	100	2.40	None
13	NaOH.....	10	100	100	0.0000	None	25	4.60	5.07

[1] Per 1000 mils of finished magma. [2] 3.1660 Gm. $MgSO_4.7H_2O$ not precipitated.

Part B.—Sodium Hydroxide Solution Poured into Magnesium Sulphate Solution.

No.	Constituent in excess.	Percent excess.	Temp. ° C.	Mils. Sample.	$Mg_2P_2O_7$.	Adsorbed. $MgSO_4.7H_2O$.[1]
14	Magnesium Sulphate.....	50	25	50	0.2269	2.4560
15	Magnesium Sulphate.....	25	25	50	0.0833	2.5640
16	Magnesium Sulphate.....	10	25	100	0.0020	Trace
17	Theoretical Proportions.....	..	25	100	Trace	Trace
18	Sodium Hydroxide.....	10	25	100	0.0000	None
19	Sodium Hydroxide.....	25	25	100	0.0000	None
20	Sodium Hydroxide.....	50	25	100	0.0000	None

[1] Per liter of finished magma.

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ABSTRACT OF DISCUSSION.

OTTO RAUBENHEIMER: In my opinion the change to the present official formula was a mistake; also the increase in strength from 5 to $7\frac{1}{2}$ percent. Milk of magnesia should be a smooth colloidal magma; it is not necessary to have it very thick. I hope that the new official method for making milk of magnesia will be by precipitation.

R. W. TERRY: In my paper of last year on the analyses of different brands of milk of magnesia, I pointed out the deficiencies in various formulas and that in the U. S. P. and N. F. formulas there was not sufficient alkali to precipitate all the magnesia. In the present paper the chemistry of the precipitation of magnesium hydroxide has been studied. Next year, I hope to be able to present some definite formulas for milk of magnesia.

L. E. SAYRE: Did the author report relative to the rapidity of precipitation?

R. W. TERRY: Yes, the more rapid the mixing the better the magma produced.

C. S. HERRON: My experience in making milk of magnesia is with 500-gallon lots. We use a 70 percent caustic with which a solution of a 1.17 specific gravity is made. The solution of magnesium sulphate is also of the same density. After precipitation, live steam is passed through the magma for about three hours. When the washing is completed the magma is free from sulphates. We have found that the specific gravity of the solutions is an important factor.

L. E. SAYRE: There is quite a variability in these magnesia preparations so far as the presence of sulphates in them is concerned.

Mr. Terry was questioned relative to certain qualities that milk of magnesia should possess. These questions were answered in the paper under the sub-head of "Desirable Qualities of Milk of Magnesia," hence, this part of the discussion is omitted.—The EDITOR.

THE ABUSE OF THE "SHAKE-WELL LABEL," WITH DEMONSTRATIONS.*

BY J. LEON LASCOFF.

The dispensing pharmacist frequently comes across difficult prescriptions, especially in the form of mixtures which do not contain insoluble matter. Unfortunately, being very busy with his routine work, very little or no attention is paid to such prescriptions. He mixes the constituents in the order written, does not consult any book of reference, and finds an easy way to overcome this need by the use of the "Shake-well Label," which he places on the bottle.

When this same prescription is dispensed in another store where the pharmacist prepares it scientifically the finished product is without a heavy sediment, transparent or a clear solution, and does not bear the so-called "Shake-well Label," used by the former pharmacist.

The abuse of the "Shake-well Label," by being placed on every mixture, has been practiced for some time. I do not mean to imply that we should do away entirely with these labels; on the contrary, sometimes even in clear solutions (in a mixture of an alkaloid and an alkali) it is absolutely essential to have such label on the bottle.

During the last two decades committees on propaganda were organized, for the purpose of holding joint meetings of the allied professions and to urge the medical men to prescribe combinations of their own, instead of the so-called proprietary articles.

The further object of these meetings is to prove to the physicians that we have scientific pharmacists who take an interest and pride in their work—and that is dispensing.

At the June meeting of the New York State Pharmaceutical Association President Smith, in his annual address, classified pharmacy as follows:

* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., New York meeting, 1919.

Class A—The Apothecary or Ethical Pharmacy.

Class B—The Pharmacy.

Class C—The Drug Store (where no prescriptions should be compounded).

It would be a great relief if there were means of separating the different stores as classified above. In my opinion, Mr. Smith's idea is a splendid one.

At the same meeting I submitted a report on the work of the Propaganda Committee, on the U. S. P. and N. F., in which I mentioned that a remarkable change had come about in the last five years in regard to prescription writing. More official preparations are called for now than were prescribed five years ago. I have dealt only with facts in reaching this conclusion. I took the trouble of going over my prescription files and have tabulated a thousand prescriptions received in 1914, and a thousand received during the present year (not during the epidemic), which prove that physicians are prescribing more U. S. P. and N. F. preparations, and also evidence that a more scientific system of prescribing obtains among physicians than formerly.

Later, I tabulated a list of one thousand (1,000) prescriptions, and found more liquids (about 62 percent) are prescribed than capsules, pills, ointments, etc.

The prescriptions (liquid) which I will present, if put up correctly will not require the "Shake-well Label."

I will classify them as follows:

A—Not compounded according to the art and science of pharmacy, the finished product, instead of being clear and transparent, is an unsightly or cloudy mixture.

B—Where the compounding is done scientifically, with an equal subdivision of doses, and "Shake" label is not necessary.

PRESCRIPTIONS.

1. Oil of Cade..... 2 fluidrachms
   Tincture of Cantharides..... 1 fluidrachm
   Castor Oil..... 4 fluidrachms
   Alcohol (50%) to make..... 8 fluidounces
   Write: Rub into scalp at bedtime.

A—Oil of Cade will be separated on account of the diluted alcohol.

B—By adding a few drops of fluidextract quillaja, resulting mixture will be homogeneous and uniform.

2. Lithium Citrate..... 1 1/2 drachms
   Sodium Salicylate..... 1 1/2 drachms
   Sodium Phosphate..... 2 drachms
   Tincture of Cardamom..... 1 fluidrachm
   Syrup..... 1 fluidounce
   Water to make..... 3 fluidounces
   Two fluidrachms 3 times daily.

A—If compounded in order written a cloudy mixture with a heavy sediment will be obtained; this also occurs when lithium citrate is added to all the other ingredients.

B—Lithium citrate is prepared from lithium carbonate and citric acid. The addition of a few grains of citric acid will make a clear, transparent solution.

3. Salicylic Acid.....
Lactic Acid.....
Resorcinol..... Of each, 1 drachm
Flexible Collodion..... 10 fluidrachms
Make a solution.
Write: External use.

A—In this prescription there is a heavy sediment due to the resorcinol.

B—The addition of a small amount of ether will clarify the solution.

4. Fluidextract Cascara Sagrada..... $2^1/_2$ fluidrachms
Nujol to make..... 3 fluidounces
Mixture.
Write: As directed.

A—An unsightly, cloudy mixture with the cascara floating on top even when shaken.

B—The addition of a few drops of fluidextract quillaja will form an emulsion, and a more uniform mixture will be obtained than in "A."

5. Ammonium Carbonate.....
Potassium Iodide..... Of each 8.0
Terpin Hydrate..... 2.0
Anisated Solution of Ammonia..... 12.0
Elixir of Orange to make..... 90.0

A—If compounded in order as written a heavy sediment occurs.

B—Dissolve the ammonium carbonate and potassium iodide in an ounce and one-half of elixir; the terpin hydrate in one ounce of alcohol. By then adding the anisated solution of ammonia, and mixing both solutions, a clear mixture will result.

6. Acetanilid..... 24 drachms
Phenacetin..... 16 drachms
Salol..... 8 drachms
Caffeine..... 8 drachms
Tartaric Acid..... 230 grams
Sodium Carbonate..... 24 drachms
Diluted Alcohol..... 1 gallon

I experimented with 4 fluidounces, dissolving the acetanilid in 3 fluidrachms of alcohol, the phenacetin in 1 fluidounce of alcohol, and the salol and caffeine in 5 fluidrachms of alcohol (2 fluidounces of alcohol in all), and then mixed the three solutions. The tartaric acid and sodium carbonate were dissolved together in 2 fluidounces of water; then the aqueous solution was gradually added to the alcoholic, when no untoward result ensued.

7. Sodium Iodide..... 20.0
Elixir of Iron, Quinine and Strychnine Phosphates..... 180.0
Write: A teaspoonful 3 times a day, after meals.
NOTE.—Same applies to mixtures of bromide with the elixir of above preparation.

A—A cloudy mixture with a precipitate. In this prescription the phosphate salts are incompatible with the sodium iodide.

B—Use the Elixir of the National Formulary, which makes a uniform and clear solution.

8. Tincture of Iodine..... 20 drops
Menthol..... 8 grams
Albolene..... 1 fluidounce
Write: Use as a spray.

If compounded as written a turbid mixture results due to the alcohol and water in the tincture of iodine, and the oil. By using iodine crystals with a few grains of potassium iodide equivalent to tincture, the alcohol and water are eliminated and a clear mixture results.

9. Salicylic Acid..... 2 drachms
Ferric Pyrophosphate..... 1 drachm
Sodium Phosphate..... 1 drachm
Water to make..... 4 fluidounces
Write: One-half tablespoonful 3 times daily, in water.

A—If compounded in order written a precipitate will occur.

B—The sodium phosphate and the salicylic acid are to be rubbed well in a glass mortar, adding to it 3 fluidounces of boiling water; the iron pyrophosphate is to be dissolved in the remaining water. By adding the first solution to the other a clear solution will result.

10. Precipitated Sulphur..... 0.20
Eucalyptol..... 20.0
Sesame Oil..... 80.0
Write: From 2–5 mils, as an injection.

A—Sulphur will not dissolve in the oil, even by rubbing.

B—Dissolve the sulphur in sesame oil by application of heat, and later, when cool, add eucalyptol. A clear solution will be obtained.

11. Sodium Benzoate..... $2^1/_2$ drachms
Sodium Bicarbonate..... 4 drachms
Liquid Triticum (P. O.)..... 3 fluidounces
Peppermint Water..... 4 fluidounces
Syrup of Sarsaparilla Comp. to make..... 8 fluidounces
Write: A tablespoonful in water four times a day, before meals and at bedtime.

A—A sediment of the sodium bicarbonate will occur if prepared in order given.

B—A perfectly clear solution will be obtained by dissolving the sodium benzoate and sodium bicarbonate in the peppermint water and then triturating it with the liquid triticum. Effervescence takes place, probably due to presence of acetic acid in the latter.

12. Menthol..... 5.00
Phenol..... 3.00
Zinc Oxide..... 20.00
Magnesium Carbonate..... 6.00
Glycerin..... 5.00
Expressed Oil of Almonds..... 30.00
Solution of Calcium Hydroxide..... 80.00
Rose Water to make..... 240.00
Write: Dab on skin every two hours.

A—After standing for a while this mixture thickens and solidifies to such an extent that it is impossible to either shake it or pour it from the bottle.

B—Mix the zinc oxide with double the amount magnesium carbonate (12.00) in a mortar; to this add the almond oil and lime water (previously mixed); triturate this well, add the glycerin and rose water, and pour into an 8-oz. bottle. Then mix the menthol with the phenol in a mortar and add it to the mixture. The result is an elegant lotion, perfectly white and uniform. The reason for the added amount of magnesium carbonate is to make the preparation more alkaline.

13.	Creosote (Beachwood)	1/2 fluidrachm
	Glycerin	
	Syrup of Yerba Santa	Of each, 2 fluidrachms
	Simple Elixir to make	2 fluidounces

A—If prepared in order written, a cloudy mixture, with the creosote floating on the surface, will result.

B—An additon of a small quantity of alcohol to the creosote will make a perfect solution. Simple elixir contains alcohol, therefore, it is not harmful to use an additional small quantity of the latter.

14.	Theobromine Sodio-Salicylate	3 drachms
	Tincture Digitalis	4 fluidrachms
	Simple Syrup	1 fluidounce
	Water to make	3 fluidounces
	Write: 1 fluidrachm.	

A—Frequently a turbid mixture will occur, owing to the decomposition of the salt when exposed to the air.

B—An addition of a few drops of 5% sodium hydroxide solution is necessary to correct the insolubility.

All of these prescriptions were presented in our store for dispensing. No eliminations or filtrations were made in either "A" or "B."

The pharmacist should never take any liberties with physicians' prescriptions in making any changes or additions.

In many cases I informed the physician of changes made, and he, indeed, was not only satisfied, but also thankful for my suggestions.

In conclusion, I would say that accuracy and neatness play a large rôle in dispensing. In liquids, where the ingredients are soluble, clear solutions, if possible, should be dispensed, thereby avoiding as much as possible the habit of using the "Shake Label." The customer judges the skill of the dispenser very largely by the appearance of the finished product. The same applies to the good quality of the cork—and the neatness of the label. If the cork breaks off the customer imagines that the quality of drugs is also poor.

A large percentage of proprietary articles are clear solutions A very few, with the exception of liniments and emulsions, require that the bottle bear a "Shake Label."

In our U. S. P. only 14 galenicals, being mixtures, emulsions, liniments and oleoresins, should be dispensed with the "Shake Label." All the other galenicals are clear, transparent solutions; that is why it is our duty to see that all liquids

which are soluble should be dispensed as clearly and as neatly as possible, without this paster, "SHAKE WELL BEFORE USING."

ABSTRACT OF DISCUSSION.

Discussions followed each prescription, and are here briefly reported in abstract, whenever there were expressed differences of opinion; otherwise the comments of the author, following the prescriptions, only are given.

PRESCRIPTION NO 1.

MR. LASCOFF: The castor oil was dissolved in 4 fluidounces of alcohol, the tincture of cantharides was added and then the oil of cade; lastly 3 fluidounces of water, containing a small amount of fluidextract of quillaja, was added. The result was a homogeneous mixture, whereas mixing the ingredients in the order given in the prescription would have resulted in a preparation wherein the oil of cade would rise to the top.

MR. RAUBENHEIMER: Quillaja in a preparation for internal use is objectionable and harmful; this does not apply in a preparation of this kind.

In Prescription No. 2, only the salt formed by the addition of citric acid was discussed.

In Prescription 3, the harmful effects of quillaja were considered, but the amount added was conceded to be without such effects.

In Prescription 5, the amounts of alcohol and glycerin necessary to maintain solution were considered. It was also brought out that sugar was sometimes precipitated. Ivor Griffith stated that glucose in 25% alcohol will hold terpin hydrate in solution.

Prescription 12 brought out that considerable experimentation is necessary to evolve a scientific method of preparation. This was admitted by the author, and also that such service should receive compensation.

THE BUSINESS POSSIBILITIES OF MANUFACTURING IN THE RETAIL DRUG STORE.*

BY GEORGE M. BERINGER, JR.

In the matter of manufacturing, the Retail Druggists of the United States might be divided into two classes: those who prefer to devote all their energies to salesmanship, and, hence, make practically nothing; and those who make a few of the commoner preparations and specialties, but draw the line at certain preparations which tradition, rather than fact, says can be made more cheaply by the large manufacturer. Those of the first class buy Brown Mixture, Chalk Mixture, Syrup of Wild Cherry and Solution of Magnesium Citrate. They even buy five and ten cent packages of Epsom Salt and sell them again—as far as the contents go—sight unseen! These are the men who continually decry the advancements in Pharmacy, who would turn our colleges into mere schools of salesmanship, yet they, themselves, violate the first principle of modern salesmanship in that they know nothing about the goods they sell. The second class, I fear, are less numerous than the first. They are surely, fundamentally, better merchants than their pseudo-successful brethren of the first class, and would probably be more successful were they but fully alive to the business possibilities that their manufacturing offered.

The trouble is, that the average druggist of all classes thinks only of his profit as the difference between the cost and the selling price. If business were so simple, we would all be merchant princes. However, there are a number of factors which

* Read before Section on Commercial Interests, A. Ph. A., New York meeting, 1919.

make the problem more complex. It is my purpose to bring before you a few of the factors that are only too often ignored.

Suppose that A and B, competitors, have each an "own name preparation" of the same type prepared for them by the same manufacturing house. Of course, that house offers a selection of designs for the packages, so that each preparation may appear somewhat different externally. A customer, who happens to purchase packages of the article from each, realizes that the contents are the same. The name of neither competitor on that article has given him any advantage. But, let us further suppose that B has manufactured the article himself and has worked certain ideas of his own into the preparation proper, giving it a distinctive character. The chances are that the customer who divides his purchases between A and B finds that distinctive characteristic of B's product pleasing or helpful to him. B has won the first point in the game of competition. He has established individuality, and individuality means "good will," and "good will" means possibly a hundred thousand dollar business for B against a ten thousand dollar business for A, though both may have been of equal professional ability at the start.

Now, I know some one is waiting to say, "I'll wager B's product cost him more to manufacture, on his small scale, than A's cost him to buy." Let us grant, for the sake of argument, that this is true. Say A paid fifteen cents for his article and sold it for twenty cents. Say B produced his preparation at a cost of seventeen cents and sold it for twenty-five cents. A's gross profit was, in round figures, 33 percent, B's, 47 percent. But, if B fully appreciated the value of his improvement of the product, and had the proper business acumen, he probably asked thirty or thirty-five cents for his article and got away with it. You see, there is some reason back of that hundred thousand dollar business. The "cashing in" on that "good will," anyhow.

The average man looks upon the immense plant of the manufacturer with its vast accumulation of special machinery, its expensive research workers and its brilliant sales force and immediately develops a case of "cold feet," in so far as manufacturing for himself is concerned. He forgets that the brilliant sales force does not have to figure in the overhead he carries upon his small operation. He forgets that the expensive research workers, with all respect for their contributions to the advancement of science, are as much a part of the advertising department as an aid to the manufacturing department of such concerns, and that he can be his own research worker with a versatility not equalled by these specialists. He forgets that his ingenuity and skill can overcome, in many cases, the vast accumulation of special machinery, and that an immense plant means an immense "upkeep."

Many stores have certain hours of the day during which very little business is transacted. In this time the employees have but few tasks. This waiting time might be employed in manufacturing with actual saving of overhead expense. I am not advocating "slave driving." It is a well-established fact that machinery will deteriorate most rapidly when lying idle. The same is true, in a way, of human machinery, and druggists' assistants employed pleasantly, sanely but continuously will be more efficient in every way than those allowed to stand idle during slack time. There is another point that here suggests itself. No salesman can sell

goods with a "snap" equal to that of the man who makes them and, therefore, knows all about their intrinsic value.

The advantage of quality should, and often does, rest with the product of the small retail manufacturer. The workman in the large laboratory, to whom the real manufacturing is intrusted, is usually a mere laborer in whose eyes the work is only mechanical routine. The workman in the store is the proprietor, and his clerks men of better training and intelligence and with a more active interest in the work. As an instance of this, I have seen fluidextracts manufactured by a retailer which were far superior in brilliance, aroma and body to many turned out by the large manufacturer with his advantage of stills and vacuum apparatus. That this advantage may be capitalized has already been pointed out.

Certain classes of preparations, such as coated tablets and pills, which require expensive machinery; fluidextracts, in general, which require the recovery of quantities of alcohol; and biologics and alkaloidal extracts, which require expensive control and assay processes, are, in the main, beyond the reach of the small manufacturer to produce. Yet, even here, are exceptions.

While coated tablets and pills are practically impossible of production, economically, on a small scale, the same is not true of plain compressed tablets, tablet triturates and hypodermatic tablets. While the cost of these on a small scale would be somewhat higher, such manufacture permits of supplying the local demand with products of superior quality as regards solubility and disintegration, since it is not necessary to make the tablets hard enough to withstand the extra strain of distant transportation. Another factor in regard to tablets is the ability of the small manufacturer to supply limited quantities of the special formulas for which there is always a demand among his local physicians. The cost of the necessary utensils need not be very great. A first-class, hand-power tablet compressing machine, with a reasonably complete assortment of dies and punches, can be secured for less than fifty dollars. A set of hard rubber molds for tablet triturates and hypodermatic tablets can be secured for from five to ten dollars, depending on the number of molding plates desired in each set. In any case, this tablet equipment should be part of every complete prescription department. I might observe that the man who makes a line of tablets is getting a better knowledge of the physical properties of drugs than can be had in any other way.

Among fluidextracts, there is one which no self-respecting druggist should buy, that is, Fluidextract Cascara. In its manufacture there is no waste of alcohol and the process is simple. The cost of production figures about as follows:

		Per pint.		Per gallon.
Ground Cascara bark	1 lb.	.30	8 lbs.	2.40
Alcohol	4 fluidounces	.20	1 qt.	1.50
Time and fuel		.50		1.25
Container		.10		.25
		$1.10		$5.40

Actual cost will in most cases average a little under these figures. Manufacturers quote from $1.35 to $1.80 per pint. The manufacturer quoting the lower figure per pint, names $6.50 as his best price per gallon. It might also be mentioned that Fluidextract Licorice is in the same class from a manufacturing standpoint.

The retail druggist who manufactures at least some portion of his own preparations has one advantage which is rarely ever considered, that is, the ability to meet emergencies. During the recent influenza epidemic, both manufacturers and wholesalers in many sections of the country were from two to three weeks behind in the filling of orders. Common preparations like Spirit of Nitrous Ether were almost unobtainable. I know of one druggist who made his own ethyl nitrite when he found that the market was bare of that substance. It would not have paid him under ordinary circumstances, but the needs of humanity at that time were paramount to the expense of production. Then too, one can imagine the prestige he gained when his customers told others, "If you can't get it anywhere else, you can get it at 'So & So's.'" The druggist who manufactures, even in a small way, has apparatus and raw material on hand that, otherwise, he would not have, and, when the need arises, can turn them to account. Thereby, he not only reaps a just financial reward, but receives the satisfaction of having helped his fellow men.

Business is a complex problem, never more so than at present. A multitude of little considered factors contribute to the success or failure of those engaged in it. We are only too apt to say that because two and two make four we have found the correct answer to the problem. However, if another figure has been omitted from the column, it avails us nothing that our answer was, in so far as it went, correct.

ABSTRACT OF DISCUSSION.

JACOB DINER: Mr. Beringer's paper is very timely and apropos. When we put something of ourselves into a thing we are more enthusiastic about it; we can speak more intelligently on the subject, and, possibly, more readily make a sale. There are, however, a number of preparations which the retailer cannot successfully make—and when I say successfully, I mean both from the commercial and the therapeutic point of view. Let me cite instances. The retailer who has been properly trained may be able to assay a digitalis tincture and an opium preparation, but at the present day the cost of such an assay is almost prohibitive. If he does not assay his digitalis tincture or tincture of opium, etc., it is his duty to purchase it from a reliable manufacturer; his purchases must not be dictated by price but by quality.

The high cost of alcohol may also prohibit the manufacture of certain preparations made from specially denatured alcohol. Take, for instance, tincture of iodine. The duty devolves upon the pharmacist to assay the preparation, and having done that, he can sell that preparation to better advantage. It is up to the retailer to use his judgment as to the preparations he should manufacture or purchase, both from the professional and the commercial point of view.

OTTO RAUBENHEIMER: The point I wish to make is that the retail pharmacist should not only make his own preparations, but he should let his customers know he does so. Let me give you a concrete illustration. I have a five-gallon apparatus in my store window, day and night, from the first of January to the last of December, in which I make a bed-bug preparation. It attracts the attention of passers-by and sells the preparation; customers come for it from quite a distance.

Customers have confidence in my household remedies because they know I make them; it is a selling argument. The strong point is that the pharmacist knows what he puts into the preparation he sells, if he manufactures it.

RECONSTRUCTION APPLIED TO COMMERCIAL PHARMACY COURSES.*

BY CHARLES O. LEE.

Recent surveys[1] of the courses in commercial pharmacy show an inclination to spend a great deal of time on the teaching of non-essentials. The reason for this condition is most probably due to the fact that there has not been enough counselling together upon the purposes and possibilities of this course. Consequently a great variety of subjects are being taught, with the result that the course does not have the merit it deserves. The mention of any of the well-established courses in pharmacy brings to mind something pretty definite as to subject matter, and as to purpose. This cannot be said about commercial pharmacy, and for this reason it seems expedient that a study of the situation be made.

In recent years many colleges and universities have introduced into their curricula, courses designed to meet a demand on the part of young men who were contemplating a business career. Commercial pharmacy was made a part of the pharmacy course for the same reason. There is this to note, however, namely, the courses offered by the colleges and universities are given, usually, to the study of business principles rather than business methods, while the teaching of commercial pharmacy is quite the converse. However this may be, there is no real reason why a course in commercial pharmacy cannot be formulated along fundamental lines, yet lose none of its significance, and prove valuable and creditable.

No less an educator than Paulsen (1) said that, "everybody ought to acquire such knowledge as will assist him, on the one hand, in following his special calling to the best possible advantage, and on the other hand in understanding the world from his position in life." How much the latter principle of this suggestion seems to be no part of our purpose in much of our modern education, yet it sounds so rational, especially for men who plan to enter business. Truly professional men seem to get this point of view pretty well. Such a principle might well guide us in planning instruction for hundreds of our young men who go out into pharmacy every year. The idea does not belongt o a past educational plan for Wooster (2) in a recent article says: "The business man lacks the functional point of view, lacks ethical training in general and needs to be pointed toward some other criterion of good work than merely that of good selling. It is easy to overlook the functional point of view. Even the better-than-the-average business man seldom has much vision into the operations of business as related to the social scheme of things. His business is for the purpose of making money." This is a pretty severe charge, and all the more serious because it so nearly tells the truth. Someone has said that during the war business often had to subordinate profit to service, which is business in its true function. This is no less a great principle in peace than in war.

Our country is entering upon an era of extensive trade relations with the world. Never before were we so in need of business men with visions of justice. Our missionaries beseech us to send into the foreign fields only those business men who have high moral and ethical ideals. The reason is self-evident. Such a request

* Read before Section on Education and Legislation, A. Ph. A., New York meeting, 1919.

[1] See reports, 1918–1919, Subsection on Commercial and Legal Pharmacy, J. A. PH. A., 8, 502, 1919.

as this places a load of responsibility upon those who teach the young business man. Our schools cannot afford to stand for anything less than this high ideal. We must inject into our instruction a breadth of vision and the proper attitude of service in things related to business. This can be done by developing a social consciousness. With this will come the spirit of service, which is ultimately a life ideal, and from this the motive that attaches great significance to the performance of a task. We need to remember that business is founded upon our social needs and is allowed to exist because society permits its needs to be supplied through business organizations. In view of this, service is the only possible business policy. Such a policy is exemplified, professionally, by the physician who has much more concern and interest in the satisfactory recovery of his patient from a difficult operation than in the fees he is to receive. How much different is the policy of service from the one so assiduously promoted, that the ultimate purpose of merchandising is financial profit. Such a motive leads to stagnation in the individual and results in no good end for society. An opinion altogether too current now is that business operations are generally conducted with a fine disregard for moral principle, as if business success were conditioned upon taking advantage of every opportunity to delude those with whom transactions are carried on. How much better it would be for business to create the feeling that to him who renders the better social service, in the production and distribution of his merchandise, shall go the greater profits.

Someone has said that "we are learning that men are born not so much with inalienable rights as with imperative duties." This imposes a heavy duty upon every citizen, and especially so upon college trained men. Page (7), an authority on business problems, says: "The educated man who goes forth to-day from his Alma Mater without some recognition of his social responsibilities, of the need of his activity, not alone along the more sordid lines of self-support but in playing the part which his mental training gives him the power to assume, as a leader in the wider activities of the social life, does not attain that nobler and higher success in life which is the reasonable goal of intelligent and enlightened ambition." No less a business man than Carnegie (8) has made the statement that "a professional career does not have for its chief end the ignoble aim of making money, and is free from the gravest danger which besets the career of business, which is the most sordid of all careers if entered into in the wrong spirit. While the primary aim in entering business may be that of making money it should not be the last consideration." Surely not all the reward of business is dollars, yet we constantly talk of every little business enterprise in terms of dollars. The subject of making money always gets a hearing from an ambitious student, and we too easily make use of the situation. Higher ideals are bound to develop in men when the functional point of view has been properly pointed out to them. There is in the business career plenty of room for the exercise of man's highest powers and good qualities.

In speaking upon the higher duties of citizenship, Bryce (9) says: "The man who is to profit by the safety and prosperity the community provides, must seek its good and place his personal will at its disposal. Benefit and burden, power and responsibility, go together. Duty is the co-relative. Nevertheless, the latter relation is the one which always tends to be forgotten and to drop into the background." This keen utterance unmistakably speaks the truth, and the only way

to bring about a high standard of business conditions is to share responsibility with benefit, serve while being served; but the service must be of a different quality from the over-the-counter-as-fast-as-you-can kind. It is time for us all to shift our economic interests from utility to welfare. In doing this, individual wants must lose their finality for the sake of the common good. Mutual interdependence is such a dominant factor in our present day civilization that it is often said that coöperation is the corner-stone of our economic system. Tufts(11) puts the idea concretely when he states: "The great war has clearly brought out one very important fact about business and industry, namely, that every important business and industry concerns not only the men who are in it, but the whole community."

Even though the needs of the group or society should be the principle applied to business, there would be no reason for less efficiency, as some argue, in one's particular field. Quite the opposite. The virile teacher goes beyond the confines of his class-room to promote intellectual leadership in community affairs. The doctor is charged with the duty of guarding the health of his vicinity. No less a responsibility falls upon every individual and much more upon the college trained man, and no exemptions should be made on account of profession or trade. Men after all like to feel that they are of some use in the world. They all desire friends, home, honor and an approving conscience. Money cannot buy these essentials of life, and since they are so worth-while, why not direct the student's mind to dwell upon these priceless elements, which are the foundation stones of our whole social structure. Smith(12) in a recent writing stated that "the greatest danger in the process of vocationization is that it shall be too narrow and technical in its aims. The only guarantee against this weakness is to see that social motives are instilled along with individual motives and that socializing methods are as much in evidence as individual instruction."

Stuart(10) also says, "Scientific training in the colleges ought not, however, to be limited to preparation for research or for a technical career. There should be cultural courses also in which 'the aspect of nature' and some conception of the human and social significance of nature's infinite resources can be effectively presented. Education in its ultimate meaning consists not in factual knowledge but in standards of judgment and of conduct."

The colleges found a high place of service in the prosecution of the war. Let us see to it that peace will not make them less serviceable in the time of reconstruction. Would that they might direct the restless thought of the day toward the principles of stable democracy, a democracy that will endure.

Perkins in an address(13) says: "One of the greatest advantages in a college training is that the earnest student learns to think and to think straight; and in the business world, the present and the immediate future hold out opportunities for the real thinker as never before existed." "A high order of ability in each and every calling was never so much in demand as it is to-day. Institutions and affairs are only as great, only as strong, only as useful as we make them."

It is an accepted fact that our colleges are playing a great part in training of men and of women to perform some task in the way which seems most advantageous. In a much less degree they are teaching young men and women to understand their positions in their relation and importance to society. On a page of a bulletin of one of our leading universities, under the title of "College Life," appears

the following: "College life is world life on a smaller scale. The thoughtful and successful citizen soon discovers that in addition to his narrower business responsibilities, he must give time and attention to those activities which have to do with general community life and its improvement." This is a splendid doctrine, and if this spirit pervades the class-rooms, there is no doubt about the caliber of the men who go out from the institution. What other institutions can foster this spirit so freely as our colleges? A man trained in such an atmosphere as just suggested, is not apt to lose all of it, even in the business world. As clerk, manager, owner, in any business enterprise, he will be able to render a service to society.

In the curriculum of every school of pharmacy is to be found one course after the other, offered with the purpose of fitting the man to more efficiently perform a definite technical task. There is no disapproval of this, but how much greater would be the efficiency if the individual knew and understood, as well, his duty to society and the place of his service in the great world of activity. Such an understanding would result in greater enthusiasm for the spirit of democracy and social justice and would lead to a more equitable condition in every way for everyone. To be a part of the great socializing movement of our institutions of learning it would seem wise and expedient for schools of pharmacy to reconstruct their courses in commercial pharmacy, in keeping with the ideals heretofore set forth, with the idea of not only making better pharmacists, but better men as well. It is far more important that we become makers of society than just members of it.

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INVESTMENTS FROM THE VIEWPOINT OF THE PHARMACIST.*

BY HOMER ST. CLAIR PACE, C. P. A.

Investments from the viewpoint of the pharmacist—opportunities classified between (1) investments of a speculative nature in which return is a profit, and in which there is business risk with little or no opportunity to exercise effective control of the capital; and (2) investments by reason of loaning money for a definite time in consideration of a definite interest return, in which risk is minimized and no ownership responsibility or risks are assumed. The latter includes Government bonds, public utility bonds, individual loans, real estate loans, etc.

General suggestions as to choice of securities for various purposes.

Pharmacists, like other successful professional and business men, occasionally have surplus funds for investment. By "surplus funds" I mean money which is not needed to carry on one's business or to meet one's personal expenses. By "investment" I mean the advancement or loan of surplus funds aside from one's business, in consideration of an interest or a profit return.

INVESTMENTS

A person may succeed in a particular business without developing the ability to invest surplus funds in such a way that his principal is safe and the return reasonably ample. We all know of instances of investors whose surplus funds have been lost and whose principal business has been jeopardized or ruined by the exercise of poor judgment in respect to incidental investments. Hence, the investment of surplus funds is a matter to which even the most successful business man may well give serious attention.

With these considerations in mind, I shall proceed to discuss, in a non-technical way, the subject of "Investments from the Viewpoint of the Pharmacist."

Business seeks capital on two distinct bases. First, capital is borrowed, and the particular business or individual promises to repay it at a fixed or determinable time, together with a compensation for the use of the capital which is known as interest.

Second, capital is sought for the permanent needs of the particular business, the compensation for which is contingent upon profits. Advancement of capital in this manner usually carries with it a proprietorship interest and, therefore, proprietorship responsibilities.

The investor thus has two opportunities for the advancement of his surplus funds. He may loan his money for a certain length of time in consideration of an agreed amount of interest, or he may advance it as a co-owner in some business enterprise with the expectation of receiving a profit.

The two fields of investment, although often confused in the mind of the investor, are radically different. It is desirable, therefore, in the first instance, to state the essential facts in relation to each.

The investment field proper, at least from the viewpoint of the incidental investor, is in the loan of funds for an interest return. Thus, $10,000 may be loaned for three years at six percent interest, the return of the principal and the payment of the interest being secured by a bond and mortgage upon real estate. In case

* Read before Section on Commercial Interests, A. Ph. A., New York meeting, 1919.

of default the property mortgaged may be sold for the reimbursement of the lender in the matter of principal, interest and costs. Again, a bond and mortgage may be bought from the investor who originally made the loan, but who is desirous of transferring his rights. Again, a public utility company or an industrial corporation may issue bonds in various denominations—for example, $100, $500, $1000, or any other desired denomination, each bond containing a promise to pay at a future time a certain amount of money, plus interest. Such a bond may be one of a series, all of which are secured by a trust deed or a mortgage covering real estate and, possibly, other property. In somewhat the same manner, the government may issue its bonds, such as the Panama bonds or the Liberty Loan bonds, by the terms of which the government promises to pay at a future time a certain amount, together with interest. In all private business organizations the rights of the bondholders to interest take precedence over the rights of the owners to profits—that is, the interest must be provided for before profits can be taken. There is usually, in addition, the pledge of specific property, aside from the lien that is created upon the general asset fund of the borrower.

A very different situation exists when an investor advances his funds to a business enterprise as a co-owner. There is no contractual obligation for the repayment of the money at a certain time and no agreement as to the amount of compensation. If a partnership in the usual form is created by such an investment, serious responsibilities may attach aside from the risk to which the amount of money advanced is subject. If the partnership fails and its debts are not satisfied by recourse to the partnership assets, each partner will be personally responsible to the creditors. The investor, in such a case, may have little chance to avoid the contingency of unsuccessful business, because in making the investment as an incident to his regular business he would have little or no opportunity to exercise personal supervision and control. Liabilities incurred in this way might even wreck his principal business.

The most common form of investment of this nature consists of the purchase of the stock of corporations. A corporation is merely an artificial person or entity created by law, which may have perpetual succession or life. It is composed of stockholders who receive shares of stock for capital paid in. The shares of stock usually have a par value. In New York the par value of shares may be as low as $5.00 or as high as $100. A corporation is managed by the stockholders, who elect directors, who, in turn, elect officers. Control is exercised by the voting of stock at stockholders' meetings, the holders of a majority in amount of stock being empowered, with few exceptions, to decide matters that arise in the conduct of the affairs of the corporation. A holder of a small proportion of the stock, therefore, often takes no effective part in the management of the corporation. Profits are distributed in the form of dividends, such distribution, granting that profits are available, being usually entirely within the discretion of the board of directors. The minority stockholder, therefore, is often unable to participate in profits, even when they are actually made. The stockholders of a corporation, differing from the partners of a firm, usually have no liability beyond the amount of money paid in for their stock, so that under ordinary conditions no additional liability attaches which may affect the stockholder's personal fortune or business.

Stocks are less attractive for strictly investment purposes than are bonds,

which will later be considered in more detail. The subject of stock investments, however, is important and a fuller consideration of the subject will now be undertaken.

Distinction should be made between:

(1) Large utility and industrial corporations, whose stocks are listed and dealt in on the stock exchanges and whose managements are dependent very much upon an appeal to widely scattered stockholders for their support; and

(2) Closely held corporations in which the incidental investor has no general market in which to sell his stock in case he desires to do so, and in which he is largely dependent upon the fairness of the stockholders who are in control as to the matter of compensation to officers, declaration of dividends, and the like. It is the latter type of corporation which is usually brought to the attention of the incidental investor. The dangers of this type of small investment are many, to which brief attention will be given.

First of all, the ownership of minority stock in a closely held corporation, that is, the ownership of less than a majority of the shares, shares conferring proprietorship rights, may give no effective voice in the control of the affairs of the corporation. Thus, the stockholders who own or control a majority of the shares have the power to elect directors and, through the directors, to elect themselves officers of the corporation. In the absence of fraud, the compensation of the officers is within the discretion of the directors; therefore, the persons in control may take by means of liberal salaries what would otherwise be available for dividend distribution purposes. A case comes to mind in which the officers, who were the controlling stockholders of a closely held but successful corporation, paid to each officer a salary of $100,000 a year, presumably in order to absorb profits to the exclusion of minority stockholders. The matter came to light in a court action in which the minority holders were unable to have the action of the directors abrogated.

The declaration and payment of dividends, moreover, is within the discretion of the board of directors; hence, such net earnings as may be left over may not find their way to the stockholders. An instance of this kind is found in the case of a leading railway company, certain minority stockholders of which attempted to make the board of directors pay dividends instead of using millions of dollars of profits to build up and improve the properties of the company. It was held that the directors could not, under the circumstances, be required to declare dividends. In the same way, in a small and closely held corporation, the majority interests may retain the profits indefinitely for the use of the corporation.

There have been innumerable instances of holders of minority interests in corporations who have considered themselves unfairly treated and who have, therefore, resorted to the courts for relief. Unless there is a gross mismanagement or fraud, the courts will seldom interfere on behalf of minority stockholders. It follows, therefore, that the holder of a small amount of stock in a closely held corporation is very often dependent upon the liberality and the fairness of the controlling interests. There is no agreement for the repayment of the investor's advances; he is assured of no definite return; and, in the fortunate case that substantial profits are earned, he may be without power to force a distribution which will enable him to realize a profit return. Even though the parties in control are

known to be men of fairness and integrity, there is always a possibility that their interests will be sold and transferred, and that new interests will be in control. Altogether too much control is surrendered by the investor to bring such an advancement of funds within the range of true investment.

In the small and closely held corporation there is likely to be little market for the stock, once it is acquired. For example, two men who held the outstanding stock of a small corporation, amounting to $30,000, which was promoting and manufacturing a new machine, induced a man to subscribe for $10,000 of additional stock of the corporation. His money was used in the business, and the two men in control were able to pay themselves liberal salaries, although they were paid against the protest of the incoming stockholder. Such surplus profits as were made for several years were used up in adding to the plant and in extending the business. The minority holder repeatedly sought to sell his stock interest, but found no one who was willing to purchase it under the conditions. He finally sold the stock, the book value of which was 150, at 50—one-half of its original cost and one-third of its book value. Even though the outcome had been satisfactory and a dividend received, a sale and transfer could have been made only by a private negotiation with some one willing to take the risks of minority stock ownership.

Aside from the foregoing, there is always the risk that the particular enterprise will not make any profits but will incur losses that will entirely extinguish the capital. The investment is thus subject to business risks and, notwithstanding the risk, the minority stockholder is usually unable to secure any effective control of the situation that would lead to the prevention of losses. He may be entirely dependent upon the controlling interests for the protection of his advance.

The man with funds to invest will often be approached by promoters, either through salesmen or the mails, with propositions for the purchase of stock. The corporation whose stock is offered may be developing any kind of business—oil, mining, real estate, manufacturing, orange raising, pecan raising, motor car production. The use of intensive methods of selling such stock is usually, although not necessarily, evidence of the fact that it cannot be disposed of by ordinary means. Attractive prospectuses are issued, estimates of profits to be earned are made, engineers' and geologists' reports are secured, sales organizations are created and compensated by commissions—all these things are done in order to sell to the incidental investor stocks of highly speculative companies.

If analyses were made of the losses suffered by business men by reason of advances for the purpose of investment, it would be found that nearly all of them arise by reason of the purchase of minority stocks in highly speculative enterprises. Many a business man, prudent and successful in his own enterprise, has tucked away a sheaf of handsomely engraved stock certificates which he keeps as a reminder of his own schooling in the art of investment. Strange as it may seem, some of the men who are most thrifty and successful in their own businesses go the farthest afield in such matters. I have a man in mind who for years conducted a successful business and by steady and persistent saving accumulated a comfortable competence. He seldom had a bad account on his books, and he never wasted a dollar in riotous living; yet he was induced to buy $5,000 of stock in an oil company and $10,000 of stock in a mining company, all of which to-day is not worth a postage stamp. He has, as mementos of his faith in prospectuses,

pieces of paper representing a loss equivalent to twenty-five percent of his entire savings. Instances of this kind can be cited by the score in every community; and, while no type of business man seems to be exempt from luckless speculation of this kind, it is safe to say that pharmacists and physicians are fully represented.

We have quite a different condition in stocks that are listed and dealt in on the New York Stock Exchange. Certain safeguards are taken by the Stock Exchange which insure to the public that only stocks of reputable companies are listed, although, of course, there is no assurance or guarantee as to the matter of dividends. These stocks consist, generally speaking, of two classes, *viz.*,

(1) Preferred stock, which is a stock with preferences over one or more classes of other stock—usually a single class of stock known as "common stock." A preferred stock is usually entitled to a certain rate of dividend, in many cases seven percent, which must be paid to the holders of preferred stock before any dividends are paid to the holders of common stock of the same company; and

(2) Common stock, the holders of which are entitled to all dividend distribution other than those made to "preferred" stockholders.

Thus, the United States Steel Corporation has a seven percent preferred stock upon which dividends have been paid regularly for many years, and common stock upon which the rate of dividends has fluctuated. In the same way, the American Woolen Company has a preferred stock and a common stock; the Atchison, Topeka & Santa Fe Railway has preferred stock and common stock; the International Paper Company has preferred stock and common stock, and so on. The preferred stock is not likely to fluctuate as violently in price as the common stock and, of course, is not so speculative.

In the case of a listed stock in a large company, the owner, even though he owns but a small interest in the company, always has a market available. Moreover, the persons in control of such a corporation often do not own enough stock actually to control it, but depend upon securing from the stockholders who own small lots proxies to vote their stock in stockholders' meetings. In such a case, there is always greater safety to the small stockholder than there is in the small and closely held corporations in which control is exercised by virtue of stock actually owned. From the viewpoint of investment, stocks in large companies whose securities are listed on the stock exchanges are much to be preferred over minority stocks in small corporations.

The purchase of stocks in the market on margin is, of course, speculative and cannot properly be considered investment. The procedure is for the speculator to advance a margin, say twenty percent, of the amount of the purchase. The balance of the money is borrowed by the broker handling the transaction from a bank or a trust company, and the stocks are pledged as collateral security to secure the loan. If the price goes down, additional margin must be forthcoming from the speculator, or the stocks are sold to satisfy the loan. If the price goes up, the stocks may be sold by the broker, at the direction of the speculator, in order that a profit may be realized. A person speculating on margin with incidental funds is necessarily dependent upon the advice and judgment of brokers or other specialists. The purchase of stocks and other securities on margin is not true investment, because the attempt is made to make the funds available cover a wider range of securities than is possible by outright investment purchase.

The purchase of stocks on the market for investment purposes, therefore, should be made outright, and the securities acquired should be held primarily for their income-producing features. If the securities advance in price, the investor of course may sell them and realize a profit. If the prices go down, the investor is unaffected, provided he holds his investment, and his dividends remain constant.

If the investor should consider stock or other security purchases, the best method for him to pursue is to select a thoroughly well-known and reliable firm of investment bankers. There are many such firms in New York, Boston, Philadelphia, Chicago and other cities. The advice of investment bankers, which is almost certain to be honest and based on a knowledge of facts and conditions, can be had without cost. Extreme care should be taken in selecting a firm of investment bankers—elaborate printed matter does not necessarily indicate a firm of standing. Many of the largest banks and trust companies maintain departments for the advice of their depositors, and such advice is usually sound. In case of doubt about a firm, reliable information can be secured from one's banker.

So much for investment in stocks. My advice sums up to the effect that minority stocks in closely held corporations, particularly those of a highly speculative nature, should be avoided; that investments in listed stocks, both preferred and common, with well-established dividend records, are entirely legitimate, provided purchases are made outright upon the basis of advice from reliable investment bankers. From the conservative investment viewpoint, however, the purchase of stocks is seldom, if ever, as desirable as the purchase of bonds.

We come now to the investment field proper, which consists of the loaning of money for an interest return. The most convenient method of making an investment in this field is through the purchase of listed bonds, as heretofore explained. Brief mention will be made of the characteristics of bonds and the details of purchase and interest payments.

BONDS.

Bonds may be considered in three distinct divisions, *viz.*:

(1) Government bonds, including the obligations of the Federal government and of the various states and their subdivisions such as counties, cities, villages, school districts.

(2) Bonds of public service companies, such as the railroads, the traction companies, and the gas and electric light companies.

(3) Bonds of industrial corporations, such as those engaged in the steel, lumber, textile, and electrical industries.

Bonds of the United States Government, usually known as "Government" bonds, are recognized as the highest-grade investment obtainable. In the normal times preceding the Great War the price of government bonds was so high that the interest yield was as low as two percent. The highest rate at which such bonds were issued during the war when the credit of the entire financial world was strained to the breaking point, was four and three-quarters percent. Bonds of this nature, while returning a comparatively low rate of interest, are marketable at any time in any commercial center and afford the maximum of security.

Closely associated with government bonds in the estimation of conservative investors are the obligations of the various states and municipalities. These se-

curities at the present time return to the investor a yield of from four and one-quarter to five percent, depending upon their desirability. They are dealt in by investment bankers, some of whom specialize in state and municipal issues. The market, while good, is not as broad and as immediate as that available for the bonds of the Federal government.

Railroad bonds, which are included in the second classification, constitute the larger part of the bonds listed on the stock exchanges. In normal times the interest return on high-grade railroad bonds is about four percent. The present yield is from five to six percent.

Industrial corporations, usually those of a manufacturing nature, often find it convenient to raise funds by the issuance of bonds, secured by trust deed or mortgage on real estate and other property. The interest yield at the present time is likely to be as high as seven or eight percent. Because of conditions growing out of the war, many commercial concerns are financing their affairs by the sale of short-term notes running from one to three years, which are issued instead of long-time bonds or special stock. Such notes often afford a desirable investment but should be bought only upon the advice of investment bankers who have studied the legal status of the notes as well as the financial standing and business prospects of the firms that issue them.

Practically all railroad bonds and many industrial bonds are listed on the stock exchange and can be bought through investment bankers or stock brokers. Railroad and industrial issues are usually in the denomination of $1,000 a bond. The government Liberty bonds, on the other hand, can be bought in denominations as low as $50, which makes them more convenient for the small investor. Any investment banker or stock broker can purchase the bonds of the government or of any reputable business organization, provided they are offered in the securities markets, whether the particular issue is listed on the stock exchange or not.

Investors should bear in mind that the nominal interest rate received may be different from the actual interest. If a five-percent bond for $1,000 is purchased at 95, the nominal interest return collected each year will be 5 percent of $1,000, or $50. Inasmuch as $50 a year is being received upon an investment of $950, the actual interest return on the investment, leaving out of consideration the appreciation to par that will take place by the time the bond matures to be paid, is 5.26 percent.

If the bond is payable at par in five years, there will be a five-percent increment which will take place during the five years; this increment will be an additional return to the investor if he holds the bond until maturity and payment. In speaking of the "yield" of the bond, an investment banker usually takes into account such a factor of increment. For example, a bond of the Fourth Liberty issue now selling at about 93.25 will mature in a certain number of years to be paid at its par value, and the investment banker calculates that the "yield" to the person who holds such a bond to maturity includes the increment in the manner that has been pointed out.

On the other hand, if a bond is bought at a premium, that is, if a $1,000 bond should be bought at 105, the cost would be $1,050. If such a bond were due to be paid in five years, and if the investor held the bond until maturity, there would be a decrement in his investment over the term of five years of $50. This de-

crement decreases the net yield, so that the interest return would not be as large as would otherwise be the case.

It will thus be seen that the investor is often concerned with the nominal interest that is collected, the actual immediate interest return on the investment, and the ultimate "yield."

These intricacies need not confuse the main features of bond investment in the mind of the investor. The investment banker is always willing to make the calculations and to give the investor full information as to the net return upon any investment under consideration.

There are two distinct classes of bonds as to form—registered bonds and coupon bonds. A registered bond is one which can be registered, in the name of the holder, with the government or with the concern issuing the bond. Interest on registered bonds is usually paid, when it falls due, by check. The interest term may be a year, or, as more often happens, six months. If the bond is lost or destroyed, provision is made by which a new one may be issued upon compliance with certain formalities. This form of bond is more desirable than the coupon bond because of this protection against loss.

The coupon bond is so called because coupons are attached to cover the payment of interest. Thus, in the case of a five-percent $1,000 bond, interest payable semi-annually, there is a coupon attached for each six-months' period during the life of the bond. When the time for the collection of each six months' interest arrives, the coupon is detached and presented for payment. The usual procedure is to deposit the coupon in a regular bank account for collection.

A coupon bond is usually made to bearer, as are the attached coupons. In case the bond is lost and falls into the hands of an innocent purchaser for value, the real owner of the bond will not be able to recover his loss. Coupon bonds, therefore, require extreme care and should always be kept in a safe deposit box or left with a bank or trust company that has proper facilities for safeguarding valuable papers.

Savings banks afford a safe and convenient method of investing surplus funds. It should be remembered that bonds, certain classes of high-grade stocks, and real estate loans are the basis of savings bank investments. Savings banks are strictly limited as to the things in which their funds may be invested. It follows that, if a depositor places money in a savings bank his funds are safeguarded by conservative investment. There are many advantages in the matter of convenience, moreover, that make the deposit of funds in such an institution desirable from an investment viewpoint. There is only a small margin between the interest paid upon a savings bank account and the interest that may be obtained by conservative investment. For the investment of an amount up to a few thousand dollars, therefore, nothing better is available than the deposit of money in savings banks. There is, of course, no chance of an increment in value, such as exists when bonds are carefully selected. However, this feature is of small importance if the amounts to be invested are small.

The advancement of money the repayment of which is secured by bond and mortgage upon real estate has already been mentioned. When the security is ample, the rate of interest satisfactory, and precautions are taken in the matter of all legal formalities, this type of investment is highly satisfactory. The market

for the security, however, is limited, and there is little or no chance for an increase in the value of the security. Loans of this kind are usually held by the person who makes them until maturity, when they are paid off or renewed. If the incidental investor loans his money in this fashion, he should turn over the details to some reliable lawyer or financial institution. The small fee that is required for the service is amply justified by the safety secured. Investment, it must be remembered, is a technical matter, and the investor should always secure the aid and advice of those persons or concerns that make it their business to study investment conditions.

There are certain matters in respect to income taxation that have a bearing upon the net return upon investments. For example, interest upon a limited amount of Liberty bonds is free from income tax. The investment banker can give reliable information upon this subject.

Finally, one word as to the best procedure in setting aside funds for the upbuilding of your private competence or fortune. Remember the hardest dollar to save is the first dollar. Each succeeding dollar comes with somewhat less effort than its predecessor. Therefore, no risk whatever should be taken with the first dollar, and, if you please, a somewhat increased risk, for the sake of increasing the return on investment, may be taken with each succeeding dollar as the dollars build one upon another.

The foregoing principle, for example, may be applied as follows: Incidental savings may be placed in the savings bank. Later, these incidental savings may be converted into Liberty bonds, and this procedure may be followed until the amount of $5,000 or $10,000 is reached. The next step may be to invest $5,000 or $10,000 in high-grade railroad bonds, the next $5,000 or $10,000 in high-grade industrial bonds, and the next $5,000 or $10,000 in preferred stocks of industrial corporations. Succeeding investments may be made in the common stocks of successful and well-established industrial concerns. If the proportion of such stocks becomes too large, further investments in the various grades of bonds will re-establish the soundness of the ratio.

In a general way, the foregoing shows a line of progress from the highest grade of investment, with a limited return, to high-grade investments of a more speculative nature in respect to income. The principle of progression is sound because, as the ability to take risks without hazarding the entire fund is established, the range and profitableness of the investments are increased. A procedure of this kind, too rarely found in actual practice, is sound to the core, and assures to the business man the great objective of sound investment—the employment of surplus funds with security of principal and an interest return proportionate to the ability of the investor to take financial risk.

May each of you, in this day of social and economic unrest, become a stabilizing factor by the accumulation of surplus funds sufficient to protect the future of yourself and of those dependent upon your industry and foresight!

RECORDS—A KEY TO BUSINESS SUCCESS.*

BY E. FULLERTON COOK.

When the Harvard Bureau of Business Research began a scientific study of business and started with the shoe business because it was one of the least complex in the retail line, they discovered almost at once that the varied methods of accounting, or often the entire absence of accounting, made their study impossible until they had devised a uniform system of accounts and induced some hundreds, of dealers to adopt and use it.

The subsequent result of this analysis has been that in the retail shoe business the essential factors have been standardized so that a dealer may know instantly, by consulting his records, whether he is running an average business which insures legitimate profit, or whether he is in need of adjusting expenses, or turnovers, or sales to bring about more ideal results. An effort was made to secure a similar analysis by the Harvard Bureau of Business Research for the drug business, but they are not yet ready to undertake this very complex problem. In the meanwhile, however, many forces in pharmacy have been combining to improve business conditions in the drug store. The large buying organization and chain-store groups, the efforts of writers in pharmaceutical journals, addresses by experts at conventions and many other forces are beginning to make an impression which is already showing results. The small drug store of twenty years ago is almost a curiosity. The trend of the present day is toward well-organized stores, better advertising, more efficient buying and better selling methods, and the druggist knows the meaning of "turnovers," "discount," "first cost," "overheads," and other modern business terms. Many, however, yet think it impossible to secure adequate records and an educational effort must be continued until the significance of these are more fully understood and the druggist recognizes that a proper accounting system is as important to his business as a stock of drugs or merchandise for sale. These records have a bearing on many sides of the business.

Of course, if credit customers are involved, this is one phase of accounting and is the most likely to be properly handled, because bills must be sent out and collections must be made if a store is to remain in business with many credit accounts. It is to figures related to sales, purchases, expenses, and profits, however, that special reference is made here.

RECORDS INFLUENCE CREDIT.

The annual, or more frequent, financial statement, giving a comparison of these key facts, is of first importance in any credit relation which the pharmacist may have with his bank, wholesale houses, or with an individual. If he cannot produce a proper financial statement covering his sales for a stated period, showing expenses during the same time, his inventory, and gross and net profits, he can hope for little consideration when the need for a loan arises. It is true that many retail druggists continue business for years without any such contingency, but the best practice of many business men has proved that a temporary loan from the bank, permitting the purchase of goods at discount, or taking advantage of some

* Read before Section on Commercial Interests, A. Ph. A., New York meeting, 1919.

special opportunity to buy, is but one of the legitimate business methods of which advantage should be taken.

RECORDS—A BUSINESS INDICATOR.

But independent of the credit relationship to the bank or elsewhere, the records of account, if properly kept, are of incalculable value in the management of the business. These records become a business indicator by showing the ups and downs of finance. If an established average relationship between these factors is being maintained, this is shown and will be gratifying. If unusual profits are indicated, increased incentive will result for all the parties concerned. If, on the other hand (and even more important), losses are discovered or if profits are being wiped out through some unsuspected cause, the manager's immediate attention may be centered upon the weakness and a remedy applied.

RECORDS—BASIS OF SELLING PRICE.

But proper accounting does even more. It furnishes the retailer with a basis for a selling price and insures profit on every sale or at least gives the necessary knowledge which shows whether a sale represents profit or loss. This is determined by knowing the relationship which must exist between the cost of goods and the selling price, if expenses are to be paid and a profit assured, and in then applying the formula to fix the proper price.

Sales.—Now, how can these results be secured? First, an exact record of sales must be kept. These preferably will be by departments: prescriptions, general drug business, "soda" sales, and as many other departments as is found practicable, such as candy, cigars, victrolas, etc. The simplest method for keeping a record of sales is through the cash register, and if departments are to be separated, there should be a machine for each department. Of course, sales books can be used, but these require time and a subsequent analysis and are not practicable for the average drug store.

Purchases.—The second item of great importance is the purchases. The policy adopted by some men has been to maintain purchases within a figure representing a percentage of sales, corresponding to the average "first cost." To illustrate, the cost of merchandise during a preceding period has represented sixty-five percent of the sales—the sales for the month are $3000, the purchases should therefore not exceed $1950, *i. e.*, sixty-five percent of the sales. This plan prevents overbuying and also shows that salable goods are being handled. Such a calculation should be made at least each month, so that the proprietor will know that he is not overstocking and that his purchases are of a salable character. The frequent analysis of these purchase figures will prevent many serious complications. Of course, it is understood that the buying price bears a vital relation to profit, and where, how, and the price paid, must be handled properly.

Expenses.—The next class of records is expenses. These must be absolutely complete. Heat, light, salaries, insurance and other common expenses are well understood, but failure to include other expenses often results in a false statement. It is now universally acknowledged that a salary for the owner of the business must be added to the expenses if he is giving his time, and the amount should equal that for which he could be replaced. This should be decided upon and drawn regu-

larly. The evidence that this policy is right forces itself upon one when it is realized that should the proprietor become sick and his services be replaced by a new manager, the new salary would immediately overload the expense column, if it had not previously been included. Another item which is not always considered is a proper rental charge when the building is owned by the proprietor. This must become a part of expense, or a false profit is being indicated. Depreciation in stock and fixtures must each year be charged to expense. This is usually estimated at 10 percent of their "first cost" and is justified because of the rapid deterioration in equipment and the necessity within a few years of replacing it. This policy amounts practically to the creation of a sinking fund for refitting the store. Breakage must also be considered as an expense and should be carefully checked up, and debts which are uncollectable must also be deducted from the gross profit. Donations and subscriptions must likewise be recognized as expenses and are usually included under advertising.

Inventory.—Another frequent source of error in a statement is the absence of inventory. This is one of the serious problems in a small drug store, but cannot be ignored in properly estimating profits. If an actual inventory has been taken within a reasonable time, the new inventory may satisfactorily be calculated for several years. This is made possible by adding the purchases for the period, to the last actual inventory, then calculating from the sales and the "first cost" percentage, the estimated value of goods sold during the same year, and subtracting this from the previous total. This will give the approximate inventory at the end of the period. Where an individual is in business, this may prove satisfactory for a short time and give figures that are reasonably accurate, but this should be checked about every two or three years by an actual physical inventory.

Profit.—Of course, the most important figure for the man in business is the net profit. When the purchases have been deducted from the sales and then the total expenses withdrawn, that which remains represents net profit and this amount, added to the salary which the proprietor has drawn, represents his clear profit from the business and the figure that must be reported in the income tax return. Whether net profit is large or small is often dependent upon the management of the records, and after all, net profit is the goal toward which every business man is striving. By having adequate records and using them, the profit can usually be maintained at a satisfactory average and oftentimes greatly increased through good judgment, based upon facts. The sales figure cannot always be advanced, particularly on advertised goods, but the price for which merchandise is bought and the reduction of expenses to the minimum, are within the control of the management, and these rather than selling price determine the real profit and the financial success of the business. A word, then, about keeping records. The excuse usually offered is "lack of time." The pharmacist who realizes the importance of records will soon either find the time for proper bookkeeping, or will employ a bookkeeper, who will keep records for him. The ideal condition would seem to be a statement of the relation between sales, purchases, and expenses, placed upon the desk of the proprietor every day by an employee and from these figures a plan of action decided upon by the manager for that day and the future, and the carrying out of the plan will require all of the available time of the manager and be more within his line of duty than the actual physical work of keeping records.

BIBLIOGRAPHY OF PHARMACEUTICAL RESEARCH

Conducted by H. V. Arny, Reporter on the Progress of Pharmacy, Chairman of the Committee on Research.

On this page, each month, will be found a list of articles on pharmaceutical research that appear in the pharmaceutical and other scientific journals of the world. Whenever possible, the list appearing a certain month will record articles appearing in American journals of the preceding month and articles appearing in foreign journals will be recorded as quickly as possible after the journals reach the Reporter.

All articles appearing in these lists will be presented in abstract form in the bound volumes of the Year Book, which will be issued as soon after the end of the year represented as editing and printing conditions permit. Those desiring abstracts immediately can obtain same for a fee of one dollar each by communicating with H. V. Arny, 115 W. 68th St., New York, and arrangements can also be made for securing photographic reproduction of entire articles at moderate prices when such are desired.

Anon
Cacao butter substitute
Pharm. Ztg.; through *Drug. Circ.*, 64 (Jan. 1920), 22

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Distillation of shale oil in Germany
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Epsom salt mined in Canada
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CORRESPONDENCE

PHARMACOPOEIAL CONVENTION, MAY 11, 1920.

SECOND NOTICE.

In harmony with the requirements of the By-Laws, attention of interested parties is called to the meeting of the Tenth Decennial Pharmacopoeial Convention of the United States, to be held beginning at 10.00 A.M., May 11, 1920, at the Willard Hotel, Washington, D. C. All incorporated bodies and other institutions entitled to membership in this convention are requested to at once apply to Dr. Noble P. Barnes, Arlington Hotel, Washington, D. C., for the necessary blanks for membership in the Convention.

Prior to the meeting of the Convention, the Committee on Credentials will meet in Washington to consider all applications which are made. It is important, therefore, that all applications for membership should be in the hands of Dr. Barnes at least six weeks before the date of the meeting. It will be difficult to consider, properly, credentials which are delayed beyond that date and especially those which may be presented at the time of meeting.

Sincerely, H. W. WILEY,

President, 10th Decennial Pharmacopoeial Convention of the United States

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THE DECLARATION OF THE ALCOHOLIC CONTENT OF PHARMACEUTICAL PRODUCTS.

THE EDITOR:

The object of the Federal law in requiring on the label of all "drugs" a truthful declaration of their alcoholic content, was to advise or warn the public regarding the percentage of this ingredient in preparations, so that anyone having scruples about the use of products containing alcohol would not be using them without such knowledge. Of course no more alcohol is supposed to be used than is necessary for the purposes of solution, preservation, etc., but this means little to the unscrupulous manufacturer.

Now since the advent of prohibition has not this requirement of the law served its purpose? Does it not now become a detriment to prohibition, to the ethical pharmacist and manufacturer and quite an advantage to the unprincipled druggist, manufacturer and certain members of the laity affected with the "alcoholic blues?"

It seems that it would be best for all parties concerned for this feature of the law to be repealed and to make it mandatory to remove declarations of alcoholic content or suggestions of same from the labels, descriptive literature and advertising. There can be no objections to this from the public or pharmacists and manufacturers not catering to a tainted business. The only objection would be from druggists and manufacturers who are desirous of a business of this nature because *the alcoholic content declaration on the label is a decided advantage to their scheme.*

The authorities, no doubt, will control the sale of certain products such as bay rum, witch hazel, tincture of ginger, etc., but there are many others which now have a large legitimate sale that have not yet been thought of in this connection and which could be used—possibly not as a delightful beverage but would certainly satisfy a severe craving for alcohol.

This proposed step would not remove all sources of information as to the alcoholic content of products to the public, but it would remove the greatest source of information.

If this idea is considered feasible, a few of the necessary details could be considered and recommendations in the form of resolutions could be made to the proper authorities from a pharmaceutical association.

CLEVELAND, OHIO. R. W. TERRY.

January 24, 1920.

Just before completing the February issue of the JOURNAL OF THE A. PH. A., we are advised of the death of Mrs. Claus, wife of Dr. Otto F. Claus, St. Louis, Chairman of the House of Delegates, 1918-1919.

Frontis Lentz, Secretary of the Baltimore Branch A. PH. A., and member of the faculty of Maryland College of Pharmacy, died February 5.

George P. Engelhard, publisher of the *Western Druggist*, died February 10, and George W. Lattimer, Columbus, Ohio, an ex-President of the National Wholesale Druggists' Association, died February 12.

PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the Editor on the day following the meeting, if possible. Minutes should be typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

CHICAGO.

The 107th meeting of the Chicago Branch of the American Pharmaceutical Association was held the evening of January 23 at the College of Pharmacy Building. Despite the exceedingly stormy night the attendance was good.

The reports for the year just closed were received. The secretary stated that eight meetings of the Branch have been held during 1919 with an average attendance of fifty-five. The membership had increased from 204 at the beginning of 1919 to 228 regular members and 82 Soldier and Sailor members. The financial statement showed the bills all paid and a substantial balance on hand. The following officers were elected for the ensuing year:

President, A. H. Clark.
First Vice-President, Forrest O. Snyder.
Second Vice-President, Stanley C. Clarke.
Third Vice-President, Amanda Stahl Druehl.
Secretary-Treasurer, E. N. Gathercoal.
Committee Chairmen: Membership, E. Paul Gibney; *Legislation*, James H. Wells; *Practice*, I. A. Becker; *Medical Relations*, Dr. Bernard Fantus; *Publicity*, Samuel C. Henry.

The principal address of the evening was made by Mr. E. H. Woodhams, Superintendent of the A. M. Todd Co. Mint Farms. The speaker discussed the growing and distillation of Peppermint and Spearmint, as well as the cultivation and preparation on a large scale of Henbane and Belladonna, and illustrated his talk with a collection of very fine slides. As an introductory, Mr. Woodhams traced the development of mint-growing in Europe, especially in the mint-raising districts of England, of which Mitcham is the most famous. In the early part of the last century, mint-growing was introduced into Wayne County, N. Y., and for perhaps forty years this was the district that produced all of the mint distilled in the United States. Just fifty years ago, Mr. A. M. Todd undertook the cultivation of mint near Kalamazoo, Mich. He was impressed with the idea that mint could be grown on the black, muck soils of this region instead of the hard upland soils that had been previously used for mint cultivation. His efforts met with striking success, and now a few counties in southwestern Michigan and northwestern Indiana produce 90 percent of the true peppermint and spearmint oils of the world. It is true that American mint oil seems not to quite equal in delicacy of flavor and bouquet the carefully prepared Mitcham oils, which command the highest price of any peppermint oils of the world. Mr. Woodhams discussed the Japanese mint industry, and showed that the oil distilled from this plant (*Mentha arvensis*), while very rich in menthol, does not in any sense equal the American or English oils for flavoring purposes. No commercial menthol is separated from American or English oils, but is obtained entirely from Japanese oil. The dementholized Japanese oil of peppermint is used to some extent as an adulterant of American or English oil, especially during the present period of high prices.

Mr. Woodhams then discussed the growing of the mint and showed many pictures of the planting and growing of great mint fields; the cutting of it, and its distillation in immense stills that are provided on this property.

He then gave an interesting illustrated lecture on "the raising and drying of henbane and belladonna." While this industry was started in an experimental way by this company in 1911, and even though they produced very large amounts of these two important drugs during the period of the war, they still consider the drug industry a side line with them. A large drug building has been erected with a steam kiln containing the equivalent of an acre of drying trays and facilities for stripping, sorting and packing very large quantities of these leaf drugs. The crops of these two drugs for the past two years were very good, and many pictures were shown of large

fields of henbane under cultivation and in bloom.

After the completion of the lecture many interesting questions were answered by Mr. Woodhams, and apparently much interest had been aroused in the audience by the presentation of the subject.

E. N. GATHERCOAL, *Secretary.*

CINCINNATI.

The Cincinnati Branch of the American Pharmaceutical Association and the Ohio Valley Druggists' Association in meeting assembled January 27th to consider the requirements of the National Prohibition Act and the Regulations published for its enforcement, in so far as they concern pharmacy, upon due deliberation adopt the following resolutions for public consideration and for the consideration of the National Prohibition Commissioner.

RESOLUTIONS.

Resolved, That without either affirming or denying the legitimate use of whiskey, brandy, etc., in medicine, we oppose the dispensing as such by retail pharmacists on prescription or in any manner. We earnestly urge a change in the law so that pharmacists and retail druggists will not in any manner or for any purpose be permitted to dispense what are commonly understood to be intoxicating liquors. It is our opinion that such liquors, if and when for legitimate medicinal use, should be dispensed only by Government Agency created for that purpose. We call upon all pharmacists to refuse to take out a Government Retail Liquor Dealer's License, and to refuse to dispense whiskey, brandy, etc., as such upon a physician's prescription.

Resolved, That in our opinion the law requires amendment to permit dispensing of pure alcohol on physicians' prescriptions, in combination with drugs entirely modifying its character, but we object to and are absolutely opposed to any requirement in that respect which will compel pharmacists to become licensed as retail liquor dealers in order to fill such legitimate needs of medicine.

Resolved, That we call to public attention that the National Prohibition Commissioner has designated eighteen pharmacopoeial preparations as intoxicating liquors, because their use may possibly be abused, and while fully recognizing the action of the Commissioner to be in this instance both conservative and moderate, we see great danger of encroachment on the right to use and dispense legitimate pharmaceutical products containing alcohol as many must contain.

Resolved, That we call attention to the requirement under Section Ten of the law to keep record of disposal of liquor in manufacture of listed intoxicating liquors, and this, in connection with Section 60, Paragraph B, of Regulations No. 60, designating eighteen pharmacopoeial preparations to be intoxicating liquors, will necessitate the keeping of records and monthly reporting of their manufacture which imposes an unnecessary and useless burden, and we believe that Section Ten of the Act should be amended to relieve of this burden.

Resolved, That we are of the opinion that the requirement of the Commissioner to make bay rum, and other alcoholic preparations for external use, unfit for beverage purposes by the addition of tartar emetic, is involved with the possibility of public harm and injury, because of the cumulative effect of such tartar emetic as a poison when used externally and its uncertain action as an emetic when used internally.

Resolved, That Section 62 of Regulations 60, allowing the manufacture and sale of antiseptic toilet preparations containing alcohol when they measure up to the standards prescribed and published by the Commissioner, contains an unfair and unjust added burden by requiring the pharmacists to decide under penalty of the law that such preparations are unfit for beverage purposes, and we believe that in fairness such burden should be removed.

Resolved, That our interpretation of Section 20 of the National Prohibition Act, referring to liability of seller of intoxicating liquor to civil action for damage caused by intoxicated person, is that the use of the word "unlawfully" would mean any violation of the Act or Regulation however slight or unintentional. We therefore recommend that the National Prohibition Act be amended so that the word "knowingly" be used in lieu thereof.

Carried by unanimous vote.

Attested. D. E. MURPHY, *Pres.* Cinn. Sec., A. Ph. A.

HARRY SCHMUELLING, *Pres.* O. V. D. A.

CHARLES APMEYER. *Secretary to meeting.*

CITY OF WASHINGTON.

JAN. 21, 1920.

The meeting of the City of Washington Branch of the American Pharmaceutical Association was called to order at 8.20 P.M., January 21, 1920, at 808 Eye St., N. W., W. W. Stockberger presiding.

The reading of the minutes of the previous regular meeting and of a special meeting was dispensed with.

Dr. Stockberger announced the appointment of a committee on membership authorized at the last meeting: Messrs. Lewis Flemer, C. C. Cannon, L. F. Kebler, F. T. Stone and H. C. Fuller.

The Nominating Committee reported as follows:

President, Dr. A. G. DuMez.
First Vice-President, Dr. F. L. Lewton.
Second Vice-President, Charles Garrells.
Secretary-Treasurer, H. C. Fuller.

It was moved and seconded that the report be adopted. The Secretary was instructed to cast the unanimous ballot of those present electing the nominees.

The Secretary announced that the ballot had been cast, whereupon the candidates were duly declared elected.

The report of the Treasurer was offered but at the suggestion of the President, its presentation was deferred until the next meeting.

A communication from the Philadelphia Branch with reference to the Year Book and JOURNAL was read and discussed.

It seemed to be the consensus of opinion that it would be inadvisable to raise the dues of the Association, which apparently will have to be done if the Year Book is to be retained, as it was felt that the loss in membership would leave the Association about where it is now financially. It was believed that under the circumstances the Year Book might well be eliminated. It was also suggested that there is hardly room enough for two scientific journals representing the pharmaceutical profession and that by combining the efforts and expenses incurred in getting out the American Journal of Pharmacy and the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, and utilizing the resources which are now expended in editing the Year Book, in preparing abstracts for the one professional journal, a solution of the present difficulty offered itself. In this connection attention was directed to the fact that there came a time in the history of the chemical journals when there was no real need for having two journals such as the *American Chemical Journal* and the *Journal of the American Chemical Society* and so the former was merged with the latter.

H. C. FULLER, *Secretary*.

NASHVILLE.

The January joint meeting of the Nashville Branch A. Ph. A. and the Nashville Drug Club, held in the dining room of the Tulane Hotel, was one of the most enjoyable and interesting meetings of druggists ever held in Nashville. The meeting was preceded by a delightful banquet, with President D. J. Kuhn acting as toast-master.

After the reading and approval of the minutes of the previous meeting, Mr. J. M. Barrett, field representative of the N. A. R. D., was introduced. He said there was greater need of organization to-day than ever before and he complimented the Tennessee Pharmaceutical Association by saying that it was ahead of any in the Union in having every druggist in the State a member. Much is being accomplished by all drug associations acting together as one man through the Drug Trade Conference, with S. C. Henry as President.

Mr. Barrett then briefly outlined the new regulations of the narcotic law. He called particular attention to the regulation requiring every retailer to have a $6.00 and a $100.00 license; the latter may be secured free by giving your permit number. All expire in June. In delivering narcotic prescriptions it is necessary to send the prescription and have the patient or his agent sign his name and address on the back in ink or indelible pencil. Exempted preparations must be sold by a registered pharmacist and at a registered place of business. Exempted preparations when diluted in a prescription must be registered the same as a regular narcotic. Wholesalers of exempted preparations must have a license and require the registry number of a dealer before they can sell him.

In regard to the new prohibition law, he said there was much doubt and speculation. However, he called attention to the change allowing wholesalers to sell special denatured alcohol to retailers in any quantity, although the retailer could only sell a pint to a customer, which must be labeled poison. He read the list of 18 preparations in the U. S. P. and N. F. which were held to be intoxicants. Tincture

Ginger, Elixir Gentian and Wine of Beef and Iron were not included in this list, although druggists will be held responsible for their misuse.

A hearty invitation was given all present to attend the meeting of the N. A. R. D. in St. Louis, September 20th to 25th A motion of thanks was voted Mr. Barrett. The following motion, which was introduced by S. C. Davis, was unanimously adopted:

Resolved, By the Nashville Drug Club that we go on record unequivocally for the fullest enforcement of all prohibition legislation as enacted by the Tennessee Legislature, as well as that provided for under the Constitutional Prohibition Law effective January 16, 1920.

We further pledge ourselves not to sell any standard or proprietary medicine placed in the unlawful list of the Revenue Department, except on a physician's prescription or when so medicated as to render them unfit for beverage purposes.

We further pledge ourselves to coöperate with the federal, state, city and county officials and to aid in the prosecution of any unscrupulous druggist or druggists.

Be it further Resolved, That we endorse the action of the recent session of the Tennessee Board of Pharmacy in revoking the licenses of those druggists convicted of violating the laws, and further that we ask the support of the public in our endeavors to live up to the above resolutions.

Messrs. Ches. Jennings, S. C. Davis and M. E. Hutton were appointed as a committee to visit the local Revenue Commissioner and find out what should be done with the prohibited alcoholic preparations which they had in stock.

W. R. White's appeal for coöperation in his efforts to analyze the prescription files of the country met with a hearty response.

Mr. S. C. Davis auctioned off the prizes left in the hands of the Entertainment Committee of the Tennessee Pharmaceutical Association, which after spirited bidding were sold to Mr. D. S. Sanders for $26.00.

On motion the meeting then adjourned.

WILLIAM R. WHITE, *Secretary.*

NEW YORK.

The January, 1920, meeting of the New York Branch of the American Pharmaceutical Association was called to order in the Lecture Hall of the New York College of Pharmacy Building, 115 West 68th Street, New York City, on Monday evening, January 12th, at 8.15 P.M.

Eighty-five members and friends were present.

Minutes of the preceding meeting were read and approved.

Member of the Council.—Dr. Hostmann reported that he would oppose the further awarding of funds for the purpose of obtaining members for the War Veterans Section.

Membership Committee.—An application was received from Mr. William Scott Adams, 1210 Penn Ave., N. W., Washington, D. C., for membership in the War Veterans Section.

Report of the Nominating Committee.—Dr. Mayer, Chairman of the Nominating Committee, reported that the following ticket had been drawn up by the Nominating Committee:

President, Frank L. McCartney.
Vice-President, William C. Anderson.
Secretary, Hugo H. Schaefer.
Treasurer, Gustave Horstman.

Committee Chairmen: Progress of Pharmacy, Geo. C. Diekman; *Fraternal Relations*, J. Leon Lascoff; *Education and Legislation*, Clyde L. Eddy; *Membership*, Robert R. Gerstner; *Audit*, Jacob Diner; *Member of Council*, Jeannot Hostmann.

The following was the program of the evening:

"Will the American Dye and Chemical Industry be Able to Compete Against Foreign Manufacturers During Normal Times?" by Major Frank L. McCartney, Phar. D., Manager New York Branch, Monsanto Chemical Works.

Specific phases of this subject were discussed as follows:

"Coal Tar Crudes and Intermediates," by D. W. Jayne, Ph. D., Manager Chemical Department, The Barrett Company.

"Colors and Dyes," by J. Merritt Matthews, Ph. D., Editor *Color Trade Journal.*

"Medicinal Chemicals," by A. A. Wasserscheidt, Manager New York Branch, Mallinckrodt Chemical Works.

"Pharmaceuticals," by Frank C. Starr, New York Sales Manager, Sharp & Dohme.

"The Situation as Viewed by the Chemical Merchant Doing an International Business," by Charles L. Huisking, President Chas. L. Huisking, Inc.

HUGO H. SCHAEFER, *Secretary.*

PHILADELPHIA.

The regular monthly meeting of the Philadelphia Branch of the American Pharmaceutical Association was held Tuesday evening, January 12, 1920, President Griffith in the chair.

The minutes of the previous meeting were read and approved. Six new members were proposed and elected. There was no new or unfinished business. Communications from Mrs. F. M. Apple and the Collector of Internal Revenue were read and filed.

The scientific program followed. Prof. Julius W. Sturmer gave an interesting talk on "1820—A Bit of History," embracing happenings in and around Philadelphia about 100 years ago. Notable among the incidents mentioned were the founding of the Philadelphia College of Pharmacy and the first edition of the U. S. Pharmacopoeia.

Prof. Louis Gershenfeld followed with a lecture on "Quantitative Urinalysis." The estimation of acidity, albumin, sugars, urea and uric acid were carefully covered. Interesting discussions followed both papers.

ELMER H. HESSLER, *Secretary.*

PITTSBURGH.

The January meeting of the Pittsburgh Branch, A. Ph. A., listened to the reading of a communication from Jos. W. England, Secretary of the A. Ph. A. Council, requesting a complete list of the dues-paid members of the Branch, and containing a suggestion that the members submit a number of topics as material for discussion by the various branches. Also from the editor of the *Druggists Circular*, congratulating the Branch upon having resumed its activities with so excellent a program as the report of the December meeting disclosed. A. E. Baier, chairman of the committee to secure membership in the A. Ph. A. of returned soldiers and sailors, reported progress, stating that the original supply of blank applications was exhausted and the receipt of 50 additional blanks received would all be signed up in a short time.

President L. K. Darbaker presented a very interesting and instructive paper treating with an unique subject "Vinegar Bees," and their method of producing vinegar, accompanied with sample jars in which these organisms were at work and provided much interest on account of its novelty. Dr. M. J. Wurdack gave a blackboard demonstration of the action of the acids on various metals in detail.

B. E. Pritchard presented a paper entitled "Chemistry and the World War," consisting of extracts from the report of the special Senate Committee on the work of the Alien Property Custodian from which the following quotation will prove enlightening and full of surprises:

"Drs. Albert and Bernstoff reported to their government that America could never establish the dye and pharmaceutical industry in this country, as we lacked the moral power for the creation of such an industry; that here each party pursued its own selfish interests, but nobody kept the whole in mind; that the problem could only be solved through regard for all points of view, and that the conflicting selfishness of this country rendered the solution impossible." And again, "after the armistice airships flew over the sea; and during that same week that those ships flew between England and America, the Department of the Interior exhibited a little vial of a new gas that they discovered but had not put into the war, and it was asserted by our Army officials that five airplanes could carry over New York enough gas in one night to annihilate the five million inhabitants of that city. Where are we going to get any protection from such gas in the future?"

B. E. PRITCHARD, *Secretary.*

NATIONAL ASSOCIATION OF RETAIL DRUGGISTS, NATIONAL ASSOCIATION OF BOARDS OF PHARMACY AND OTHERS TO SEND DELEGATES TO U. S. P. CONVENTION.

The Board of Trustees of the United States Pharmacopoeial Convention, at its recent meeting held in St. Louis, drew up amendments to the constitution and by-laws of the convention which it proposes to present to the convention when it convenes in Washington next May.

The board recommends that the National Association of Retail Druggists, the National Association of Boards of Pharmacy, the American Drug Manufacturers' Association, the United States Division of Customs and the University of Havana, in addition to the colleges, societies, governmental departments, etc., now members of the convention, be permitted to send delegates to the decennial meetings of the body.

HOUSE OF DELEGATES, AMERICAN PHARMACEUTICAL ASSOCIATION.

ABSTRACT OF THE MINUTES OF THE SESSIONS HELD IN NEW YORK CITY, AUGUST 27 AND 28, 1919.

First Vice-Chairman, Samuel L. Hilton, presiding.

THE CHAIRMAN: It becomes my very pleasant duty to call the House of Delegates of the American Pharmaceutical Association to order. At the same time it is with a feeling of deep regret. I am sorry to inform you that Chairman Claus has been seriously ill practically all of the winter. His condition is such that he is not able to be with you. It seems to me that it would be appropriate that the Secretary be directed to wire our sympathy and best wishes for a speedy recovery. If some one will make a motion along that line the Chair will gladly recognize the motion.

W. C. ANDERSON: I so move. Motion seconded and carried by a standing vote.

THE CHAIRMAN: The first order of business is the roll call of delegates.

SECRETARY HOSTMANN: We have received credentials from delegates of thirty states, six national associations, thirty colleges and alumni associations. If there is no objection, in lieu of the roll call, I will pass around slips and ask the gentlemen to sign the same.

THE CHAIRMAN: The next order of business is the reception of delegates from the Department of the United States Government. We have with us Col. Frederick N. Hartsock, of the Medical Corps of the U. S. Army, as a special representative of Surgeon-General Ireland. I take very great pleasure in introducing Col. Frederick N. Hartsock.

ADDRESS OF COL. FREDERICK N. HARTSOCK.

It is a very happy event for me to have been detailed to felicitate this association on its 67th convention, and to express the greetings of the Surgeon-General. You have a number of topics to discuss at this convention which are of mutual interest, and as a representative of the Surgeon-General's office, it will give me much pleasure to convey the proceedings of these different councils to the Surgeon-General.

I have never had the pleasure to associate with the American Pharmaceutical Association, as a body, but individually I have been in very close touch with many of your representatives during the period of the war. The Army Medical Department, as you know, has had here in New York its largest supply service during the period of the war, and it has been my duty to supervise this special service. Our supply service is charged with the procurement and the various details of handling all of the equipment, hospital and otherwise, pertaining to the Medical Department, and with further reference to your Section, I have had the supervision, to some degree, of the standardization of pharmaceuticals in charge. And to meet that end, I have had very frequently to call on some of your members all over the United States in the various pharmaceutical houses, as well as men connected with the colleges and so on, to give us advice and suggest the procedure during the war. You know in the beginning of the war, America was peculiarly bereft of very many pharmaceuticals, and shortly after the beginning of the conflict in Europe, before we entered it, I found that there was a decided lack of products of many pharmaceuticals which we had hitherto overlooked. That was one of the first problems that we had to meet in New York; that is, the raising of production of these so-called minor pharmaceuticals. You are all familiar with Dakin's solution and allied products; our German friends took away from us the patent rights to many of the coal-tar products, and submarined many of the ships carrying drugs, etc. So we had to look to other sources of supply, even for the standard drugs. We had to search into the farthest corners of the United States to get such drugs as cocaine, morphine, and some of the rarer drugs. For a long time we were hard set. We were up against it, so to speak, with reference to some of the patent rights, but happily later on, that was soon settled by our Enemy Alien Custodian, and the way was opened to our American manufacturing pharmacists to supply the wants, and I must say it was a wonderful surprise to me how they met the requirements. Even in this period when we are dissembling this wonderful machine, I am sorry that they produced so much. At no period during the war, except at the very beginning, was there any dearth of pharmaceuticals, and the factories promptly met every indication, and for that reason I want to particularly congratulate your special type of business and profession.

Many members of your Association have given without stint most valuable services to

the Government. I will not take up the time of this session to go into the details of the different sections to which these men were assigned, but by their particular and peculiar knowledge, that is professional knowledge combined with their business ability, we found places for many hundreds of them.

I had the pleasure of having associated with me at the depot four or five of your very best men as advisers during the war. They not only had the acumen that came from a long study of pharmacy and manufacturing methods, but they also had the business acumen, which was a very big asset to me. I certainly think that the men of your profession aided largely in putting an end to the Hun. We feel specially proud in our Medical Department of having made a bull's eye, and a good part of the success attained was through the assistance of pharmacists.

With reference to the special legislation which it is proposed to recommend, I would rather attend your sessions without committing myself or the department which I represent. My report can then have the consideration of the Surgeon-General's Department. It is a great pleasure to have been a delegate to this convention.

THE CHAIRMAN: It is gratifying to have a representative of the Medical Department of the United States Army here to speak, as he has, with reference to the activities of pharmacy and pharmacists during the war, and of the coöperation that it received from pharmacists throughout the country. It is our policy, as pharmacists, to practice coöperation. We want to coöperate with the Medical Department, and in return we simply ask reciprocal coöperation and consideration; we will not ask for anything that is unreasonable. We also have with us a representative from the United States Navy, Lieutenant Charles Schaffer. He is one of the class of pharmacists in the U. S. Navy recognized by Surgeon-General Braisted as a man entitled to the commission as a Lieutenant, and has been made a Senior Lieutenant in the Medical Corps. It will give us much pleasure to hear from Lieut. Charles Schaffer.

ADDRESS OF LIEUTENANT C. SCHAFFER, M. C., U. S. NAVY.

Mr. Chairman, Members of House of Delegates, ladies and gentlemen: It is indeed a pleasant duty to be with you and as the Navy's representative to voice the greetings of Surgeon-General Braisted.

I am particularly delighted to have this opportunity of addressing a few words bearing on the status of Navy Pharmacists in the hope that my remarks may serve to correct many erroneous ideas which may prevail, among the civilian members of the profession, as to the Navy's readiness to maintain a properly systematized pharmaceutical service. Allow me to state that its aim in that direction is no less than the American Pharmaceutical Association's high aim recognized by all who have the interests of the profession at heart.

As far back as 1898, the Navy recognized the need for men trained in the science of pharmacy. The Act approved June 17, 1898, organizing the Hospital Corps, provided for a limited number of pharmacists; twenty-five being appointed at the time and given the rank of Warrant Officers in accordance with the law. In 1912, further provision of law was made for the advancement of Pharmacists after six years' service to the commissioned rank of Chief Pharmacist. In 1916, the Hospital Corps was re-organized; the need for a greater number of Pharmacists having been demonstrated, provision was made to appoint as many as was deemed necessary to carry on the work in the Hospital Corps of the Navy; about sixty appointments were made. Owing to the added responsibilities of war conditions, early in 1918, the Surgeon-General of the Navy recommended eighty-one Chief Pharmacists and Pharmacists for temporary commissions beyond the limit of rank in the Hospital Corps. These officers were given the temporary rank of Junior Lieutenant in the Medical Corps and have since been advanced to the rank of Lieutenant in that Corps for special duty in their own profession; these temporary appointments may continue in force for a period not later than six months after the termination of the war. It is believed that on the whole the war service of the members of the Navy's Hospital Corps has demonstrated their ability to meet every occasion even under the most unusual circumstances, and it may be possible that the faithful work of this Corps may result in providing a flow of promotion to commissioned grade such as outlined in the Darrow Bill introduced in the House of Representatives a short time ago. I am of the opinion that Surgeon-General Braisted may express favor for the general principles of this proposed measure which would provide for a permanent commissioned pharmaceutical personnel in the Navy.

While the opportunity is at hand I desire to express appreciation for the efficient, untiring

and self-sacrificing manner in which the drug and pharmaceutical manufacturers met every occasion in supplying our needs during the past two years. Notwithstanding the shortage of material of all kinds, the lack of fuel and man power, and many other hardships, there was hardly a break in the flow of medical and surgical supplies from the manufacturers' plants to our storehouse and as a result of this our Supply Depots were prepared at all times to meet in full all requisitions for supplies. This is a record to which manufacturers may point with much personal pride.

THE CHAIRMAN: We appreciate the remarks of the representative of the Surgeon-General of the Navy. We have with us a gentleman representing another branch of the United States Government, Dr. A. G. DuMez, of the U. S. Public Health Service.

A. G. DUMEZ: Mr. Chairman and members of the American Pharmaceutical Association, House of Delegates: It gives me pleasure to bring to you the greetings of Surgeon-General Rupert Blue, of the Public Health Service. I can assure you that it is his sincere wish that this convention will be even more fruitful of results than those which have been held in the past. You are all familiar with the activities of the United States Public Health Service, and I will, therefore, not go into a detailed account of them. During the past 12 months you have been invited to assist the Public Health Service in the carrying out of one of its public health measures. I trust that the experience has been a pleasant one on your part, and that it may mark the beginning of a greater interest in the service. It has given me pleasure to have this opportunity of being here with you, and that I am at your service to render what assistance I can in making this convention a success.

THE CHAIRMAN: With reference to the question that was brought out by Dr. DuMez, in which the Surgeon-General of the Public Health Service has recently shown activities along certain specific lines, I want to say that the records show that very nearly 60 percent of the retail drug stores of the United States have returned signed pledged cards assuring coöperation.

Chairman Hilton appointed as members of the Committee on Resolutions: J. A. Koch, chairman; E. F. Kelly, F. W. Meissner, John G. Godding and W. C. Anderson. Committee on Nominations: Robt. P. Fischelis, Chairman; Edward Dorsey and F. C. Godbold.

Secretary Jeannot Hostmann reported verbally as follows: The routine business of the House of Delegates has been attended to. There was a little delay due to the activities in getting ready for this meeting. Most of my work was carried on in conjunction with H. V. Arny, chairman of the Committee on Federation. As he is going to report to this body for his Committee it would really be a duplication as we both worked along the same lines. Chairman Arny will follow me with the report of the Committee on Federation in which there will be enough worth-while material for discussion by the delegates. The House of Delegates is getting to that point now where we must depend upon action by the delegates of the State Associations themselves. The House of Delegates has not been in the position during past years to do anything very definite, because it was still in the process of being molded. After you have heard the report which Professor Arny will render, you will see that we are making quite rapid progress.

It was ordered that the report of the Secretary be spread upon the minutes.

H. V. Arny now read the report of the Federation Committee of the American Pharmaceutical Association.

During the past year, your Committee has transacted business by mail through the medium of bulletins, and on Saturday, August 23rd, it held a meeting at the Hotel Pennsylvania, at which were present Messrs. Caspari, Day, LaWall and Arny. The following members, unable to be present, have read this report and approve of the decisions arrived at by those present at the meeting: Messrs. J. H. Beal and C. O. Bigelow.

Secretary Jeannot Hostmann of the House of Delegates was present by invitation and acted as Secretary of the meeting.

Mr. S. Kopald, of the Bronx County Pharmaceutical Association, was given a hearing and submitted an interesting and important proposition based on clubbing rates for membership in Local, State and National Associations (the N. A. R. D. and A. Ph. A.).

After a discussion of the problems before it, the meeting decided:

1. That all plans of National Federation so far submitted to the Committee are impractical, under existing conditions.

2. That the plans for State Federation along the lines suggested at the 1918 meeting of the House of Delegates are feasible, provided a fair adjustment of the question of fees is possible.

3. The proposition of an A. Ph. A. membership fee of $3.00 per annum to members of State associations, provided the A. Ph. A. membership constitutes 100% of the membership, while highly desirable is scarcely feasible and it is hoped that the Association and the House of Delegates will work out some plan whereby a combination fee can be arranged on more elastic lines than 100% membership.

4. That the Committee recommends earnest consideration of the following plan proposed by Mr. J. W. England:

STATE AFFILIATION.

Amend Chapter VIII, Article III by adding:

"; furthermore, the Treasurer of the American Pharmaceutical Association is authorized to remit annually to the treasurer of any State Pharmaceutical Association the sum of one dollar for each member of the State Association who is a member of the American Pharmaceutical Association, provided that at least 51 percent of the dues-paid members of the State Association are members of the American Pharmaceutical Association."

Making the amended Article read: "Every member shall pay *in advance* to the Treasurer the sum of four dollars annual dues, and by neglecting to pay said contribution for six successive months may be dropped from the roll of members. If the annual dues (four dollars) and the annual subscription to the JOURNAL (four dollars) be paid at one and the same time a reduction of three dollars shall be allowed; furthermore, the Treasurer of the American Pharmaceutical Association is authorized to remit annually to the treasurer of any State Association the sum of one dollar for each member of the State Association who is a member of the American Pharmaceutical Association, provided that at least 51 percent of the dues paid members of the State Association are members of the American Pharmaceutical Association."

5. That the Committee sees much promise in the plan of "clubbing rates" in dues; local, State, N. A. R. D. and A. Ph. A., as proposed by Mr. Kopald; and urges that the proper committee give this matter its careful attention when the plan is presented in definite form.

In the afternoon, the conference, ordered by the Federation Conference of 1918, was held with the following gentlemen present:

From the American Conference of Pharmaceutical Faculties: T. J. Bradley. From the Proprietary Association of America, E. F. Kemp. From the American Association of Pharmaceutical Chemists, Harry Noonan. From the National Wholesale Druggists' Association, F. E. Holliday. From the American Pharmaceutical Association, H. V. Arny, W. B. Day, C. E. Caspari and C. H. LaWall.

In addition to the foregoing delegates, there were present by invitation: Editor E. G. Eberle, of the A. Ph. A. JOURNAL, and Secretary Jeannot Hostmann of the A. Ph. A. House of Delegates.

At the conference, H. V. Arny presided and Jeannot Hostmann acted as Secretary. The sole topic discussed was the formation of a national committee on pharmaceutical publicity and after a unanimous vote favoring the general idea of publicity, the following tentative plan was discussed seriatim and each section was adopted without dissenting vote.

COÖPERATIVE PUBLICITY IN AMERICAN PHARMACY.

(*a*) Each national association invited to send delegates to the Federation Conference held in Chicago last year, be requested to appoint a committee on publicity and the chairmen of such committees thus chosen or some other representative of each particular organization shall constitute a national committee on pharmaceutical publicity, to which shall be added as an ex-officio member, the editor of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

(*b*) Certain pages of each issue of the A. PH. A. JOURNAL (not to exceed six at first) shall be set aside for the reproduction of matter relating to the public aspects of pharmacy, to be furnished by members of the national committee on

publicity; said matter to consist of journal editorials, abstracts of papers and news items that are of interest to the public.

(*c*) All such material described in Section 2, shall be sent to the editor of the JOURNAL OF THE A. PH. A., at least ten copies of each such article being furnished by the contributor. It shall be the duty of the editor of the A. PH. A. JOURNAL to submit each article to each member of the national publicity committee, and if one negative note is recorded such article will not be published.

(*d*) All approved articles, which have been published on the special pages of the A. Ph. A. JOURNAL described in Section 2, will be sent as soon as possible after publication in the JOURNAL, as reprints, preferably in sheet form, to a selected list of newspapers and magazines; the list of such publications being compiled by a sub-committee of the national committee on pharmaceutical publicity.

(*e*) The expense of printing, reprinting and mailing reprints to magazines and newspapers shall be apportioned among the several organizations represented on the national committee on pharmaceutical publicity, upon such basis as the *committee* and its participating associations shall decide.

(*f*) In addition to the publicity method outlined in sections *b*, *c*, *d*, *e*, the committee shall be empowered to arrange for the publication of special original articles bearing on pharmacy, in popular periodicals and magazines of large circulation; details for such methods of publicity being left to the proposed national committee.

In order to carry out the proposed plan, the conference by unanimous vote decided to appoint a committee consisting of delegates to the conference present at the meeting, and empowered said committee to formulate plans of organization of the National Pharmaceutical Publicity Committee.

The Chairman thereupon appointed as such an organization committee: H. V. Arny (A. Ph. A.), T. J. Bradley (A. C. P. F.), F. E. Holliday (N. W. D. A), E. F. Kemp (P. A. A.) and Harry Noonan (A. A. P. C.).

A motion was passed by unanimous vote directing that an abstract of the proceedings of the conference be transmitted to all of the national associations represented at the 1918 and 1919 conferences, requesting that such abstract be read at the next annual meeting of each such association and urging favorable action on the recommendations of the conference as to publicity.

Before adjournment, a motion was put and carried authorizing the Chairman and Secretary of the conference to carry out the action agreed upon and leaving of the next meeting of the organization subject to the call of the Chairman.

Having presented this outline of the work done at the meetings of August 23rd, your Federation Committee begs to submit these concluding recommendations.

(See Recommendations 1 to 5.)

6. Believing that the Federation Committee has accomplished most of the purposes for which it was created, its members request that the Committee be discontinued. Its special work on the status of the House of Delegates has in its opinion been completed.

Of the other work which it has inaugurated, it recommends the following disposition:

7. That a Publicity Committee of five members be created to carry on the publicity work as above outlined in coöperation with other national bodies.

8. To carry on the work among State associations and to consider and develop similar work among local associations, a special committee of the House of Delegates should be created.

All of which is respectfully submitted by

The Committee on Federation,

H. V. ARNY, *Chairman*,
CHARLES E. CASPARI,
CHARLES H. LAWALL,
WM. B. DAY,
J. H. BEAL,
C. O. BIGELOW.

THE CHAIRMAN: Gentlemen, you have heard the report of the Committee on Federation. This report contains much matter of vital importance. The Chair is ready to entertain any motion with reference to the report.

W. C. ANDERSON: Before proceeding with the discussion, I would like to make an explanation. The Committee in its report made note of the fact that the National Association of Retail Druggists did not attend the conference held on Saturday, and I want to explain that it was not because the National Association of Retail Druggists is not interested in this matter, for fear of misunderstanding. The notice of the meeting was delayed in its delivery and it was impossible for the representative, myself, to reach the meeting in time. The notice of the meeting was received at 4 o'clock on Saturday afternoon and the meeting was held here at 2 o'clock.

It was moved that the report be discussed and that every member of the Association have a voice.

Mr. S. Kopald now explained his plan providing for a "club rate" of $12.00, covering membership in the A. Ph. A., N. A. R. D. and State Associations.

The question was discussed by Messrs. Day, Fischelis, Hostmann, Anderson and Kelly. H. V. Arny expressed the opinion that the matter under discussion was taken care of by recommendations, numbers 5 and 8.

It was voted to proceed with the discussion of the report, and that the recommendations of the Committee be taken up seriatim. (Carried.)

W. C. ANDERSON: Are you going to adopt these recommendations without referring them to the Resolutions Committee?

THE CHAIRMAN: I am informed by the Secretary that it can be done.

SECRETARY HOSTMANN: The reason for my opinion is that these are not resolutions, but recommendations—a report of the Committee, including recommendations. If a recommendation is the same as a resolution, then I misinformed your Chairman.

THE CHAIRMAN: The point that they are not resolutions but recommendations from a committee is well taken. They can be acted on and adopted here.

Recommendations, numbered 1, 2, 3, 4, 5 and 6 were read by Chairman Arny of the Committee. After a lengthy discussion they were unanimously approved (seriatim).

The consideration of recommendations numbered 7 and 8 was postponed to the second session.

SECRETARY HOSTMANN: I have a communication from the Professional Guild of Kings County, a resolution on "stable prices on standard products" and a letter from the Roosevelt Memorial Association. I move you that they be referred to the Committee on Resolutions.

THE CHAIRMAN: They will follow the usual course and go to the Committee on Resolutions.

The first session of the House of Delegates was then adjourned.

SECOND SESSION.

First Vice-Chairman, Samuel L. Hilton, called the second session of the House of Delegates to order at 1.30 P.M., Thursday, August 28. He announced for the first order of business the reading of the minutes of the preceding meeting, and that immediately following the special order of business adopted at the close of the first session, finishing the consideration of the recommendations of the Committee on Federation, would be taken up.

The Secretary read the minutes in abstract, of the first session; on motion and a vote they were approved. Chairman H. V. Arny read the seventh recommendation of the Committee on Federation.

H. V. ARNY: Recommendation number 7 bears on the idea of national coöperative work. I think the proper thing for me to do is to read the plan of coöperative publicity in American pharmacy, as it is called. I do that to give you the background of the resolutions, because I want to bring out that this plan was a subject of three or four hours' debate last Saturday by the delegates of five of the eight national associations. I think it would be unwise for the House of Delegates to amend this particular plan; in other words, it is the tentative plan that has already been adopted by these associations. I am reading them to show you merely what the thought

is, and the recommendation relating to this is merely that the spirit of the plan would be approved. (Reads "Coöperative Publicity in American Pharmacy.")

R. P. FISCHELIS: I move that the recommendation of the Committee be approved, provided the publicity plan outlined is adopted by the Association.

F. C. GODBOLD: I second the motion.

THE CHAIRMAN: Are there any further remarks? (Motion carried.)

Recommendation No. 8 was read by H. V. Arny.

THE CHAIRMAN: You have heard the recommendation; what is your pleasure?

W. C. ANDERSON: I move its adoption.

R. P. FISCHELIS: I second motion.

(The motion carried after considerable discussion.)

SECRETARY HOSTMANN: Mr. Chairman, I now move you that this report be accepted as a whole. (Motion seconded by R. P. Fischelis and carried.)

MR. FISCHELIS: I move that this report which has just been passed and the recommendations which we are making to the Association be presented to the Second General Session to-morrow. (Motion seconded.)

W. C. ANDERSON: I take it that would include any business we transact this afternoon should be transferred to the meeting to-night instead of waiting until Saturday.

THE CHAIRMAN: The Chair would so rule on that point. All in favor of that motion will signify by saying aye; opposed No. The ayes have it and it is so ordered.

THE CHAIRMAN: Yesterday afternoon our sessions were cut short by reason of the fact that we had to vacate the room at 6 o'clock. There is one thing that was omitted and that was the calling of roll of delegates for reports or resolutions. Now if any one has any reports they should be presented. If any one has any resolutions, they should go to the Committee on Resolutions, and now is the time to hand them in.

Dr. Frank Cain, President of the National Pharmaceutical Association was invited to address the House of Delegates.

Doctor Cain, in his remarks, discussed the activities, past and future, of the National Pharmaceutical Service Association. Dr. W. C. Anderson, on request from the Chair, replied to the address.

REPORT OF THE COMMITTEE ON RESOLUTIONS.

Your committee begs to report as follows on the resolutions submitted to it for consideration:

The committee recommends the adoption of the resolutions endorsing the objects of the Roosevelt Memorial Association.

It is recommended that the communication from the Professional Guild of Kings County containing much valuable information and statistics on compulsory public health insurance be referred to the Association's committee having this matter in charge for their consideration.

Your committee recommends the adoption of the following resolution endorsing price maintenance legislation:

> *Resolved*, That the American Pharmaceutical Association earnestly endorses suitable price maintenance legislation and requests members of the United States Senate and the House of Representatives to favor its enactment into law.

Your committee recommends the adoption of the following:

> WHEREAS, At present, the manufacture and sale of proprietary medicines is open and free to all comers, and carries with it no responsibility in keeping with the important function which medicines aim to supply, and
>
> WHEREAS, Such extraordinary liberty has in the past led many unscrupulous persons (mostly foreigners) to take undue advantage of this condition, thus casting discredit upon an occupation that may be so controlled as to serve an honest and useful purpose, and
>
> WHEREAS, Recently attempts have been made to resort to extreme measures for the control of such proprietary medicines as are exploited to the public, and

WHEREAS, Both the American Medical Association and the American Pharmaceutical Association have gone on record in the classification of proprietary medicines, and

WHEREAS, These classifications do not harmonize and do not meet existing conditions, therefore be it

Resolved, That the American Pharmaceutical Association, in convention assembled, hereby instructs its Commission on Proprietary Medicines to bring about, if possible, a reasonably harmonious agreement between the American Medical Association and the Proprietary Association of America, as to legislation concerning this class of remedies, the laws controlling the sale and manufacture of this class of medicines in the Dominion of Canada possibly offering a groundwork for a basis of agreement.

Respectfully submitted,

J. A. KOCH, *Chairman*,
WM. C. ANDERSON,
E. F. KELLY,
JOHN G. GODDING.

THE CHAIRMAN: You have heard the report of the Resolutions Committee. What is your pleasure?

W. C. ANDERSON: I move it be received and the recommendations adopted. (Seconded.)

THE CHAIRMAN: Are you ready for the question? All in favor of the motion as made that the report be received and the recommendations therein be adopted, will signify their intention by saying aye; opposed no. The ayes have it and it is so ordered.

The next order of business is miscellaneous business. Is there any miscellaneous business to bring up at the present time?

THE SECRETARY: We can now take up the appointment of the committee that is to take up the work of federating the state associations where the outgoing Federation Committee left off.

R. P. FICHELIS: I move the incoming Chairman be authorized to appoint a committee of five.

(Motion seconded and carried on being put to a vote.)

THE CHAIRMAN: Is there any further unfinished business? If not, we will now hear the report of the Committee on Nominations.

R. P. FISCHELIS: The Committee on Nominations beg to report:
For Chairman, S. L. Hilton, Washington, D. C.
First Vice-Chairman, E. F. Kelly, Baltimore, Md.
Second Vice-Chairman, E. L. Newcomb, Minneapolis, Minn.
Recording Secretary, Jeannot Hostmann, Hoboken, N. J.

W. C. ANDERSON: I move that the report be received and the Chairman of the Nominating Committee be instructed to cast one affirmative ballot for these candidates.

(Motion seconded and carried.)

The ballot having been cast the Chairman declared the nominees elected for the ensuing year.

THE CHAIRMAN: The Chair, therefore, declares these officers elected.

THE SECRETARY: In moving to adjourn, I move you that we adjourn subject to the call of the Chair. (Motion seconded and carried.)

THE CHAIRMAN: The next order of business is the installation of officers. I hardly know what to say to the House of Delegates for honoring me by election as presiding officer. I have endeavored to do my best on this occasion and endeavored to facilitate your work. It was only at a very late hour that I learned of Chairman Claus' illness, and still later before I was able to give any consideration to your work. You have called me to this position, I have not sought it, but I want to assure you I will give you the best I am capable of. I thank you.

The Chairman then installed the officers presented by Messrs. F. H. Freericks and R. P. Fischelis, who introduced the officers-elect.

E. F. KELLY, First Vice-President: I shall be glad to heartily support Chairman Hilton in making his administration a decided success. I am very optimistic about the future of the House of Delegates. I believe in this matter of federation and that the House of Delegates will justify its existence very fully. I thank you.

(The Second Vice-President, E. L. Newcomb, was not present in the convention hall.)

SECRETARY HOSTMANN. I want to assure you that I have the House of Delegates very very close to my heart. I might call attention to the fact that this is the first year that we do not have to tinker with our by-laws. Our by-laws after nine years are finally in what appear to be a workable shape. I think there are some present who would like to see the day when this House of Delegates will be an entirely different body from what it is. Sentiment is gradually crystallizing toward the view that our Association must become, if it wants to accomplish anything, a delegate body, pure and simple; that is what it should be, and the House of Delegates that we now have is simply leading up to that idea. I am sure every thinking member must realize that. If that is ever accomplished, I do not think we will need any clubbing plan like the one that we are going to work on. The clubbing plan is simply a go-between, just as this House of Delegates is an intermediary between the old organization or form of organization of the A. Ph. A. and the coming organization, which must be a delegate body. It cannot be any thing else, if we want to accomplish anything. The day will come when we will not have 15 or 16 associations in a large city. There may be district organizations, but they will be just as the branches, or as the county units of the A. M. A. are to-day. There probably will be local associations, just the same as you have local medical associations, practitioners' clubs, and so on, but they are simply for local purposes. I hope there are a great many of us present who will live to see the day when the work begun by the pioneers in this House of Delegates will finally result in placing organized American Pharmacy where it belongs, and where it is going to be before we get through. I thank you.

THE CHAIRMAN: If there is no further business, a motion to adjourn is in order, with the proviso for a meeting subject to the call of the Chair.

A motion was made accordingly, seconded and carried.

In attendance at the first session were 28 delegates, representing 22 State associations and 35 delegates representing non-voting associations; at the second session, 19 voting and 37 non-voting delegates were present.

SOME LABELS FOR GODFREY'S CORDIAL, BATEMAN'S DROPS AND TURLINGTON'S BALSAM REQUIRE IMMEDIATE REVISION, AND PROMPT ACTION IS NECESSARY TO AVOID PROSECUTION.

The Pure Food and Drugs Department has advised the drug trade that some of the labels or wrappers of Godfrey's Cordial, Bateman's Drops and Turlington's Balsam are not in conformity with the law and therefore such preparations are misbranded. While the Bureau cannot give assurance that stocks in the hands of jobbers or retailers bearing objectionable labeling will not be interfered with, the opinion seems to prevail that if the labels and wrappers around these preparations are immediately discontinued, and the Bureau of Chemistry advised of that fact, no further action will be taken. Failure to act promptly, however, will submit offenders to prosecution without further notice, as the Bureau has already gathered the necessary evidence as to the misbranding of the preparations referred to.

There is no question but that the literature accompanying the preparations referred to is in violation of the law, but the manufacturers and dealers have given little attention to this printed matter. This, however, does not excuse them.

We are not informed as to the extent to which the old style of labeling and wrapping has been continued, and this is of course simply to advise those who have neglected compliance in regard to these preparations.

There is another point of value in this connection, and that is, the Bureau of Chemistry will very likely be guided in future action relative to other preparations by the net results of this experiment in reforming abuses without resorting to the drastic methods which the law makes available to the authorities.

SYMPOSIUM ON THE REVISION OF THE UNITED STATES PHARMACOPOEIA.*

THE SCOPE OF U. S. P. REVISION.

BY CHARLES H. LAWALL.

The Committee on Scope of the U. S. P. IX was the first experiment of its kind, I believe.

Its duties were governed by the initial paragraph of the "general principles" adopted at an early session of the 1910 convention in the following language:

"We recommend that the Committee of Revision be authorized to admit into the Pharmacopoeia any medicinal substance of known origin, but no substance or combination of substances shall be introduced if the composition or mode of manufacture thereof be kept secret, or if it be controlled by unlimited proprietary or patent rights and the list of substances should be carefully selected, with standards for identity and purity, as far as possible. Substances used only for technical purposes should not be admitted to the next Pharmacopoeia, and a sta ement should be pla ed in the preface to the effect that standards of purity and strength, prescribed in the text of the Pharmacopoeia, are intended solely to apply to substances which are used for medicinal purposes, or in determining the identity and purity of the same."

It is doubtful whether a better phrasing of the necessary guiding principles of such a committee could be devised.

In the application thereof, however, it was soon evident that there was much opportunity for discussion and argument, and the length of time devoted by the committee on scope to the question of what should or should not enter into the U. S. P. IX would have delayed the issuing of the book for a year longer, had not the committees, to whom were assigned the duty of drafting the standards for the final accepted list, gone ahead and prepared copy for a large number of substances irrespective of the final decision, thus working synchronously instead of successively as was the intent. The personnel of the committee on scope was entirely medical.

Theoretically, it would seem proper for physicians only to decide what is to be included in the list of officially recognized substances, but practically, it does not work out very well. Each physician, of course, follows certain habits in prescribing and relies upon certain drugs for particular results. Two equally successful practitioners may use different drugs entirely, and if it comes to a question of limiting the list of official substances each wants the substances that he uses included in such a list, and he may have a poor opinion of the list selected by his equally successful professional brother.

When to the time consumed in settling differences of this kind is added the time consumed in convincing physicians that certain substances of pharmaceutic importance must be admitted in order that preparations of uniform quality may be made, it is evident that the plan has its disadvantages.

I have heard physicians ridicule the Pharmacopoeia because it includes in the official list Iron Wire and Mercury, although they would criticise the same book did it not contain the preparations of iron and mercury which can only be properly standardized by beginning with the first ingredients.

Inasmuch as the report of the Committee on Scope was reviewed by the entire committee during the progress of the last revision of the Pharmacopoeia and many changes made during the progress of the work, it would seem advisable for the next convention to change the procedure and make the entire Committee of Revision a committee on scope. The suggestions for admissions and delegations could be made by the various sub-committees together with arguments in favor of the change and, while the mimeographed discussion might be voluminous, it would probably lead to quicker results than were obtained by the plan used in the present revision.

It is hoped that a radical change in procedure will be instituted in the next revision by providing for frequent meetings of the heads of sub-committees. This group is known as the Executive Committee and it might be a good plan for them to act as a clearing house in the matter of scope and submit the proposed list together with reasons for action taken to the entire committee for ratification. This would be the best plan of all.

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* Papers on the revision of the United States Pharmacopoeia were read before the Scientific Section and the Section on Education and Legislation of the American Pharmaceutical Association at the New York meeting, 1919. The papers and discussions printed in this number of the JOURNAL were presented before the latter Section; other papers of the Symposium will follow in succeeding issues.

SCOPE OF THE PHARMACOPOEIA.

BY HENRY KRAEMER.

In the biological sciences it is said that in the development of the individual, it passes through, in a very brief space of time, the evolution of the race. I am getting to believe that in pharmacopoeial work, if one serves long enough on the Committee of Revision, he will pass through the experiences of all those who have had anything to do with pharmacopoeial revision since pharmacopoeias were written. It would seem that it is experience that gives a man his point of view. Of course, he must have a mind to note his observations, possess sufficient judgment to form right conclusions and backbone enough to state his point of view.

I was much interested the other day in reading an article by that pharmaceutical seer, who seems to comprehend the wisdom of the ages—John Uri Lloyd. This time he was writing concerning spurious drugs. He said: "I am of the opinion that in the majority of cases, adulteration and misbranding are unintentional. Collectors do not possess the necessary technical knowledge, confusing plants of similar appearance and habitat with the genuine." I have just come to a like conclusion as a result of farming and harvesting several acres of medicinal plants at the University of Michigan. The experiment was started on an extensive scale because I expected a loss of about 90 percent but instead we lost less than one-tenth of one percent out of 20,000 plants. I was not prepared to harvest the crop but nevertheless went at it with an inadequate amount of drying space. Drugs were strung on wires as well as spread on the floors. It required care to prevent admixture at times and I came to view the whole question of adulteration in an entirely different light. Furthermore, it almost seemed to me like a waste of energy in taking the question of adulteration as seriously as we do. Not that the question is of minor importance, but our finding should be communicated to the collectors, who should be told of their shortcomings and instructed to carry on their work differently. In other words our present organization in securing pure drugs is wonderfully inefficient and will continue so until we begin our work at the point where errors creep in. From a practical experience of this kind, as well as field work in the collection of medicinal plants, we find that a good many closely related species resemble each other and even plants that are widely separated have many points in common, as young plants of Poke closely resemble those of Belladonna. The first fact that is brought out in the study of the scope of the Pharmacopoeia will show that one's point of view will depend upon one's practical use of the book.

The subject which is bound to come up for discussion, and on which there are two viewpoints, is the number of articles to be included in and deleted from the U. S. P. IX. There are two views, namely, (I) that it should be confined to useful drugs and limited to simple preparations for which tests and standards capable of verification can be applied. Those holding this view would relegate to the National Formulary all those drugs which, no matter how much they may be employed, they consider useless. For this work they would also relegate all compound preparations, as Mistura Glycyrrhizae Composita, Pilulae Catharticae Compositae. There is another class that hold to the view that the Pharmacopoeia should include in it all those drugs for which there is a demand by the medical profession, and which are largely employed in the manufacture of proprietary preparations for which there is an enormous demand by the laity as well as physicians.

I am of the opinion that it would be desirable for the medical profession to name the substances which should go into the Pharmacopoeia, but so long as there is no concerted action representing an expression from the majority of the physicians of this country, it is not possible for us to be guided by what a few representatives of the medical profession desire. For the most part, those who have expressed themselves are pharmacologists and could tell nothing about the action of drugs, unless they had a sphygmomanometer or a myocardiograph for measuring the influence. I do not wish to be misunderstood as not recognizing that the work of the pharmacologist is fundamental, leading to the development of a rational therapeutics. But in pharmacopoeial work we must bear in mind that we cannot wait for a science to develop and we, who are actively engaged in the investigation and manufacture of drugs and medicines, know that there are many substances, not included in the U. S. P., which are more or less extensively and successfully employed, and for which manufacturers must prepare some standard. Whether a drug is in the Pharmacopoeia or not does not affect its use, but if there is no standard furnished by a body of disinterested investigators, representing the Committee of Revision, the manufacturer must grope

in the dark. We must educate the national and state analysts to a comprehension of what has been learned with years of effort and explain to those who oft-times are unable, because of a lack of practical experience, to comprehend the essentials in the making of desirable, elegant and efficient preparations. We might well go back to the wisdom of Dr. H. C. Wood, who as president of the U. S. Pharmacopoeial Convention said:

> "A common, fallacious belief is that pharmacopoeial recognition means that the drug recognized is of value; the fact is that the United States and other pharmacopoeias have in them numerous drugs of very little use. The nature or motif, so to speak, of a pharmacopoeia is not to distinguish between worthy and worthless drugs, but to see that a drug which is asked for is, as sold by the apothecary, pure, and that proper preparations of uniform strength are made by the apothecary.
>
> "The question which the framers of the pharmacopoeia ask themselves is not, Is this drug of value, but is there a demand for it by the profession of medicine? If five thousand doctors in the United States believed brick dust to be a valuable remedy and habitually used it, brick dust would have to go into the Pharmacopoeia. Witch-hazel is probably as active and as useful as is brick dust, but witch-hazel is a fad and is enormously called for, and so witch-hazel must go into the Pharmacopoeia. The Pharmacopoeia exists for the purpose of requiring the apothecary to give, in the first place, pure brick dust or pure witch-hazel when asked for; and, in the second place, uniform preparations of these remedies."

During the last revision I adhered as closely as I could to the dictum that the physician ought to know what he wants, and in the preparations of the monographs on Digitalis and Strophanthus I yielded to this opinion. In the case of Strophanthus I even gave way to my better judgment in including the seeds of two species of Strophanthus. I may add, however, that I doubt very much if the situation regarding Strophanthus will be improved until the Pharmacopoeia requires that Strophanthus shall be imported in the original follicles so that we can identify the species being used.

In spite of all that was done, and we deleted some 30 vegetable drugs for which I had most laboriously prepared definitions and descriptions, the very men representing the medical profession set up a howl of dissatisfaction, because the number was not increased three-fold and limited to only those drugs which could be used for experimentation upon frogs, cats and dogs. I do not say that their interest in humanity is not as great as that of the practicing physician, but their manner of expressing it is distressing as well as unsportsmanlike. I do not say that I will not support the dictum that substances to be included in the Pharmacopoeia should not represent therapeutic value and pharmaceutical necessity, but I will ask for a broader, more humane and more practical interpretation of these principles. In other words *the scope must be all-inclusive.*

With the limited time at my disposal I cannot discuss the other large questions which will come up from time to time for consideration. One of these is the question of simple preparations *versus* compound preparations. It must be borne in mind that both druggists and doctors are going to continue making and prescribing the compound preparations and it will not solve the difficulty to merely cut these out of the U. S. P., and transfer them to the National Formulary, for the N. F. is also a legal authority just as is the U. S. P. Such transference from the U. S. P. to the N. F., therefore, is about as sensible a procedure as transferring an article from the right hand pocket to the left.

For my own part, I am coming firmly to the conclusion that the advance in Pharmacy must, to some extent, consist in the preparation of a larger number of compound medicaments and of which Huxham's Tincture stands as the exponent. I cannot get away from the days when we ground the Cinchona, Bitter Orange Peel, Serpentaria, and made a finished preparation of compound Tincture of Cinchona fit for a king. Someone must work out these combinations in which we have the re-enforcement of a valuable drug by adjunctives which enhance its quality and potency, imparting at the same time, taste and flavor to the finished preparation. I feel that everything should be done by the Revision Committee of the Pharmacopoeia to encourage the manufacture of compound preparations which are used both directly and indirectly in medicine.

I was much interested in reading the article by John K. Thum, in which he advocates the inclusion of a liquid soap in the next Pharmacopoeia. His arraignment of the Committee of Revision is rather interesting to me as I am well aware of his adhesion to those tenets which will make for a conservative Pharmacopoeia.

Among the other subjects which must be considered in the scope of the new Pharmacopoeia I may mention the following:

1. The extension of the definitions to include additional sources of supply. During the war we were practically confronted with this question and it was found possible to extend the available supplies and reduce the expensiveness of quite a number of drugs. The situation practically forced Mexican Scammony on the market and also the American Styrax, because the Levant article was not obtainable.

2. The stability of certain important drugs and their preparations will doubtless receive greater consideration than ever before. It seems to be a fact that a considerable quantity of such preparations as the fluidextract and tincture of Digitalis, fluidextracts of Ergot and Convallaria, which are on the market, are of inferior quality. It has been stated to me that 30 percent of the fluidextract of Ergot on the retail druggists' shelves to-day is practically worthless and, hence, worse than useless. This does not apply to the best pharmacists or those who are enjoying a large prescription trade and who, consequently, carry fresh stock.

3. The physiological assays of the various drugs and drug derivatives, including the diphtheria antitoxin, seem to demand a most painstaking revision. This is likely to be a vexatious problem, because there is a division of sentiment among pharmacologists as to the accuracy of such assays and also as regards the details of each particular assay. In addition to providing standard assay methods it would seem desirable to extend the list of the drugs subject to physiological assay to include some of the more important vaccines, as anti-typhoid vaccine, which are now just as valuable and as largely consumed as the anti-diphtheritic serum.

4. The Pharmacopoeia should acknowledge the value of the carbolic acid coefficient as demonstrating germicidal activity and thereby officially covering assay of the important class of germicides. This will involve a thorough review of the methods of determining carbolic acid coefficient and the approval of some one particular method, rather than leaving the field open, as at the present time, to three or four assays.

5. In this connection, there might be included a tentative list of suggested additions to the U. S. Pharmacopoeia X:

Acidum Acetylsalicylicum	Protargol
Acidum Diaethylbarbituricum (Veronal)	Solution of Chlorinated Soda
Benzene (Benzol)	Theobromina
Benzyl Alcohol	Tuberculinum
Cantharidin	Vaccinum Staphylococcicum
Chlorinated Paraffin (Dakin)	Vaccinum Typhosum
Duboisine	Sodii Biphosphas
Dionin	Salvarsan (Arsenobenzol)
Epinephrina (Adrenalin)	Serum Antimeningococcum
Fluorescein (Diagnostic) Reagent	Sodii Arsanilas (Atoxyl)

These, it occurs to me, are some of the large questions involved in the scope of the Pharmacopoeia which should receive the attention of pharmacists, and upon which we must have positive ideas in order to develop a Pharmacopoeia which meets the requirements of good practice of to-day.

U. S. P. REVISION—WHO SHALL DO THE WORK AND WHY?

BY ROBERT P. FISCHELIS.

The United States Pharmacopoeia is no longer a book of formulas. It is now a book of standards recognized as such by the Congress of the United States which represents all the people of this country. It is no longer published in the interest of the pharmacist or the physician alone, but also, and largely, in the interest of the public. Shall this addition to the function of the Pharmacopoeia cause a transfer of the work of revision to a new organization responsible directly to

the people or shall this work be left, as heretofore, in the hands of scientists chosen by the Pharmacopoeial Convention which represents incorporated medical and pharmaceutical colleges and associations?

We have had one revision under the latter auspices since the U. S. P. became the legal standard for drugs by act of Congress. From all reports, this revision has been, on the whole, eminently satisfactory and it is very doubtful whether the public interest could have been served better by placing the revision in any other hands. The strongest argument for the present method of revision, to my mind, is the thoroughly democratic policy which it is able to pursue. An open-minded revision committee under the present form of organization is in a position to permit all those interested in standards for drugs to submit their views and act upon such suggestions without fear or favor.

While a government bureau or a scientific foundation laboratory might start out with the best intention to maintain this same democratic spirit, it would soon lack that very thing. We have had enough examples to show that it is impossible in such organizations to eliminate the narrow and biased viewpoint. Symptoms of autocracy are sure to crop out here and there and while it is unlikely that any special interests would be served to the exclusion of others, the wholesome result of discussion pro and con between the various medical and pharmaceutical interests, which has led us so often to the happy medium, would be sorely lacking.

I do not mean to imply that the present revision committee is perfect but a critical survey of its make-up will reveal a pretty well balanced organization with all the necessary viewpoints represented. Whenever revision committees of the U. S. P. are selected, it should be borne in mind that the best work can be accomplished by having a balanced organization, thoroughly democratic in its make-up, ready to listen to every point of view and willing to decide a case only on its merits. Physicians, pharmacists and chemists sh uld make up the revision committee, but it should be arranged that under these three classes of professional men we have included expert bacteriologists, pharmacologists, plant chemists, and biological chemists, in addition to physicians and pharmacists representing laboratory medicine and practice; retail, wholesale and manufacturing pharmacy; research and routine chemistry. Furthermore, the addition of a few men whose training has been along pharmaco-legal and medico-legal lines and a hard-headed business man or two would help to round out the organization and make for greater efficiency.

ABSTRACT OF DISCUSSION.

CHARLES E. CASPARI: In replying to the question "Who shall do the work and why?" of U. S. P. revision, I may possibly encroach on some other questions; if I do, it will only be for reference and not for full discussion. It is possible for the Pharmacopoeia to be revised only in two ways: Either, as at present, by a committee elected by the U. S. P. Convention; or by the United States Government.

There was a time when I was in favor of turning the Pharmacopoeia over to the Government. Happily, I have gotten over that view and I believe that it should be revised along the same general lines as in the past; except, and this is rather a large exception, that the committee should not be composed of more than fifteen members. In my opinion a committe of fifty is cumbersome, as proved in a number of instances during the last revision. In selecting a number as large as 50 it is not always possible to select 50 men who are going to be animated by the same ambition to do the work. There is always some "dead wood" in such a large committee that is useless or worse than useless.

Furthermore, I think the committee selected should be a paid committee and held responsible for the prompt make-up, promptness and accuracy of the work.

In my own case, and I am sure I speak for a number of others, the pharmacopoeial work in the last revision was done following the work I was paid to do. That work had to be done first and any time left was devoted to the revision of the Pharmacopoeia. That is not as it should be. If the Committee is smaller and is paid a certain amount, I do not care what it is, the members make themselves responsible, and the work would be turned out very much more expeditiously than the last edition of the Pharmacopoeia.

If the committee is limited in number the expense of the revision will be very materially decreased. But whether the work of revision is to be done by a large committee or a small committee, I would advocate more frequent meetings of sub-committees. During the last revision

there were several meetings of sub-committees. At a meeting of the sub-committee on essential oils we accomplished more in eight or ten hours than we could have accomplished in as many or more weeks by correspondence. The joint meeting of the sub-committees on Organic and Inorganic Chemicals showed great results.

Summarizing what I have said: The Pharmacopoeia should be revised in a similar way as in the past, but by a much smaller, paid committee which shall hold frequent meetings in various places to agree upon results, rather than by correspondence. This will make for more expeditious and efficient revision.

A. G. DuMez: In attemping to discuss this question I shall assume that the present organization for revising the Pharmacopoeia will be much the same as in the past. The Revision Committee may be reduced in size or even enlarged for that matter, and similar changes may occur with respect to the of sub-committees. In either event I think the following remarks will apply.

At its inception, the Pharmacopoeia was intended to be a book which would serve as a guide to the pharmacists in recognizing the more important drugs and in the preparation of the more important medicaments. That feature has been altered to such a degree that the Pharmacopoeia is now essentially a book of standards and it has been recognized as such in the Pure Food and Drugs Act. It, therefore, seems to me that we are justified in expecting that the Pharmacopoeia should be the last word with respect to accuracy on all matters which it purports to control.

From the criticisms which have come to my notice, I am forced to conclude that it does not completely satisfy these expectations with respect to chemistry. I believe, therefore, that the chemist has not been represented on the Revision Committee to the extent which he should have been, and I would suggest that he be given—that is the commercial and analytical chemist—a greater representation on the next Revision Committee.

Another agency which it seems to me should participate to a greater extent in the revision of the Pharmacopoeia is the Federal Government. There are various bureaus of the Government —the Bureau of Standards, the Bureau of Chemistry and the Public Health Service—which have facilities for conducting research work of the nature required and these have accumulated much valuable information in carrying out their routine work. I believe an effort should be made to make greater use of these facilities and secure this information which at present we can only obtain when it is published, and much of it never will be published.

SAVING TIME IN U. S. P. REVISION.

BY JACOB DINER.

It is assumed that the general method of revision by committees is not to be changed, and that the scope is to be to establish standards for drugs and their preparations.

The success of any undertaking depends to its greatest extent upon two factors: The underlying foundation and the organization back of it. This is as true of the business of pharmacopoeial revision as of any other enterprise.

Theoretically, there is a sound foundation upon which the structure of pharmacopoeial revision is to be erected, namely, the previous edition of the United States Pharmacopoeia. Practically, however, it is merely a pen and ink sketch, not even a well-developed plane, giving detailed specifications. I am happy to state at this time that one of the suggestions, which I intended to make, has already been put into execution. Chairman Charles H. LaWall has sent out a number of letters asking pharmacists, chemists, teachers and others, to make such criticisms and comments as they have to offer. This, indeed, is a very splendid beginning, and promises much for the new edition of the U. S. P.

I would further suggest that, inasmuch as the committees are appointed for a term of ten years, each chairman of a committee or sub-committee should begin revision work immediately after the publication of the last edition of the U. S. P. In this way the different committees would, at the decennial meeting, be in a position to consider actual revision matter instead of taking up most of the time of that meeting with committee appointments and, to no little extent, with political wire-pulling. In that way we could start with a solid and well-planned foundation

and, no doubt, with some definite plans and specifications for the superstructure and also for the interior decorations and adornments, if any there be.

The next matter requiring careful consideration is the organization which is to carry out the work. In the past, geographical distribution of committee-membership was considered of great importance; it is to some extent, but not in the way of distributing patronage and for the purpose of paying political and personal debts. In the past this has led to a sacrifice of efficiency on the altar of diplomacy. It is an established fact that a committee, as a rule, is no stronger than its chairman. He can make or mar the success of the entire committee. The qualifications for chairmanship should be neither geographical nor political. Ability and willingness to do the work himself and to obtain ready and sympathetic coöperation from his fellow-members on that committee should be the only or, at least, the chief qualifications for chairmanship. The chairman should be a man of convictions yet amenable to reason, and imbued with only one object, that of obtaining the best possible results from the work of his committee. He must be open to conviction, free from personal motives and prejudices and a conciliator of no mean degree. Furthermore, the members of any given sub-committee should be, geographically, as close to each other as can possibly be arranged from the material at hand. Considerations and discussions by correspondence are tedious, time-consuming and most unsatisfactory from many points of view. If the members of a sub-committee are within easy traveling distance of each other they could readily meet and accomplish in one day's discussion more, and with greater satisfaction, than could be done in a month of correspondence.

Another important matter is the selection of the members of the committees and sub-committees. It is essential to pick the right men for each committee. In the past there has been a perpetuation on committees of certain men whose principal qualifications were the ability to talk and write a great deal on subjects with which they had, at best, but a mere "speaking" acquaintance. It is not always the man who reads ten papers, or reads the same paper ten times at ten different meetings, who is really qualified to act on a scientific committee. Much knowledge can be gleaned for parade purposes from thumbing the leaves of a dictionary and cheap renown for erudition may be acquired by glibly quoting the presumable happenings in pharmacy in ancient Babylonia. We have allowed too much freedom and, most important to them, too much advertising publicity to these pseudo-scientists. Let us dig up the men who really are capable to perform this scientific and important work in a real scientific manner; the men who are willing to do this work for the glory and the satisfaction of the deed itself and not for its advertising value and who, moreover, are willing to do this work promptly and without bias. Then we will have a new United States Pharmacopoeia which will surpass anything of its kind and which will be in the hands of the profession within a reasonable time after the Pharmacopoeial Convention.

ABSTRACT OF DISCUSSION.

WILBUR L. SCOVILLE: I can endorse the sentiments of Dr. Diner on this proposition; there is one other factor, however, I would like to mention in regard to the saving of time. The saving of time does not mean the hastening of time. The first pharmacopoeia was issued within a year, I think, from the time preparations for its publication were begun; the other editions were not long delayed until the pharmacopoeia was enlarged, and the time for completion increased until on the 8th revision something over five years were required. Then the question of time became an important incident and my understanding is that the committee decided that, if there were a larger number on the work it could be done more promptly because there would be more men to do it. The committee was increased from 25 to 50 and it took six and one-half years to get it out.

The real issue, to my mind, is not so much getting the pharmacopoeia out in a hurry, but letting the pharmaceutical and medical world know when it is coming. There was uncertainty for several years relative to the time when the present edition of the U. S. P. would come out. This information is important for a number of reasons, not the least the one of conservation and prevention of financial loss. However, we can afford to make haste slowly; I do not think six years is any too much time for the revision. I was made to realize the need of time in the revision of the National Formulary. I had to edit that work and thought I was going to get out a book with very few errors. I was very much chagrined when, during the first three or four

months, from 75 to 100 errors were found. I realize the difficulties incident to the getting out of the pharmacopoeia wherein we have a thousand articles for which there must be provided nomenclature, descriptions, tests, assays, etc. When the Pharmacopoeia got into print errors were found that needed correction throughout the book, and since then other errors have been discovered, which might have been avoided by giving more time to the work of revision.

My suggestion is that the Pharmacopoeial Convention should *fix* the time when the new Pharmacopoeia shall go into effect. There is a great difference between hurrying time and saving time. It is wise not to hurry the work too much, but the time should be fixed as to when the Pharmacopoeia is coming out, and when it will go into effect, then we know what we have to look forward to.

WILLIS G. GREGORY: I think it was Mark Twain who said, it was difference of opinion that made horse races. There is always a difference of opinion in discussing questions of great interest.

When my friend Diner was reading his paper he said that the appointments on the Revision Committee ought not to be controlled by geographical considerations and then, afterward, he said he believed the sub-committees should be appointed within a limited area so they could readily have conferences. I really do not know which proposition he believes in.

Talking about saving time: I agree with Professor Scoville that hurrying does not always mean saving time. I believe to save time we should preserve our present committee; namely, a large committee, a committee of 50. It will be recognized that a committee of 50 is more democratic. This body is big enough to have within its limits representatives of all the various interests concerned with the materia medica. Physicians have representation; the government is represented; chemists are represented; pharmacists and pharmaceutical manufacturers are represented, etc. Therein is the strength of our Pharmacopoeia—it is representative. I think we should preserve our original committee, and not bring the question of a smaller committee up for a discussion at all. We should have an Executive Committee of, perhaps, 15 members, composed of the sub-chairmen and the chairman and, perhaps, the general officers. I believe that the Executive Committee should be given greater power. I think there should be certain things, within their scope, that they may determine without reference to the general committee.

Here is another time-saving proposition: Nearly every member of the Revision Committee is sure to have some fads, some one pet scheme that he thinks will save the world, if he can only get it presented to the committee. I do not think members ought to be privileged to bring up any half-baked fancies and have the committee thrash them out, at the expense of time as well as money. I would like to see the rule established that no motion should be presented to the Revision Committee unless it has four seconds. If not 10 percent of the committee is willing to assume responsibility for presenting the subject for consideration, why should it be presented at all? Another preliminary rule should be, that a motion before the Executive Committee requires, at least, two seconds, that would be three sponsors out of fifteen; that is only 20 percent of the Executive Committee; these men are supposed to know what they are about. Those who are on the Committee know that much time will be saved by the adoption of the suggested rules.

Something has been said about the expenditure of money to facilitate the revision of the Pharmacopoeia. Money can be wisely spent in saving time, and I am quite in accord with the views that have been presented for meetings of the sub-committees, when necessary, and the discretion for that necessity I would place in the Executive Committee. I think it is highly desirable to have annual conferences of the sub-committees during the meetings of the American Pharmaceutical Association.

I do not think it is in the spirit of recompense that the work of revision is done by members of the committee, but in the spirit of loyalty to the profession and service to humanity. However, the workers should receive something in the way of financial recompense. The criticism of Dr. Caspari is well founded, that men, naturally, take care of the duties first for which they are paid. The members of this committee are busy men and are entitled to some financial compensation for the work they do, and authority should be vested in the chairman for necessary expenditures, without the delay occasioned by too much "red tape."

COUNCIL BUSINESS

COUNCIL LETTER NO. 8.

(*Continued from p. 99, January* JOURNAL A. PH. A.)

S. S. No. 85. Howard Clinton Arnold, 113 North Ave., Washington, Pa., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 86. Frank Taylor, 27 West Pike St., Canonsburg, Pa., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 87. Lloyd F. Scott, 815 Allison Ave., Washington, Pa., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 88. Reginald G. Montague, 1125 Beatty Ave., Cambridge, Ohio, rec. by Carl Brenan and W. D. Walters.

S. S. No. 89. Morris Dimiceli, 215 E. 76th St., New York, N. Y., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 90. Joseph Charles Gershenfeld, 936 No. Holly St., Phila., Pa., rec. by Adley B. Nichols and Charles H. LaWall.

S. S. No. 91. Jay Samuel V. Lerner, 124 E. Colorado St., Pasadena, Cal., rec. by R. P. Fischelis and J. W. England.

S. S. No. 92. Philson Delp Collins, Center St., Meyersdale, Pa., rec. by F. H. Freericks and J. W. England.

S. S. No. 93. Henry Schnell, 161 E. McMicken Ave., Cincinnati, Ohio, rec. by Frank H. Freericks and J. W. England.

S. S. No. 94. Selmer Joe Simonson, Greybull, Wyo., rec. by Frank H. Freericks and J. W. England.

S. S. No. 95. Edward A. Lehr, 1221 Harrison Ave., Cincinnati, Ohio, rec. by C. A. Arnold and Frank H. Freericks.

S. S. No. 96. Vivian Staples, Osceola, Wis., rec. by Frank H. Freericks and J. W. England.

S. S. No. 97. Edward George Konvalinka, 2114 S. 58th St., Cicero, Ill., rec. by Frank H. Freericks and J. W. England.

S. S. No. 98. Peter Angelo R. Pra, 411 Monroe St., Hoboken, N. J., rec. by L. Ricucci and G. Barricelli.

S. S. No. 99. Robert Karl Schill, 121 Alexander St., Newark, N. J., rec. by A. F. Marguier and S. Gartenberg.

S. S. No. 100. Casimir Melvin N. Wrobleski, 7008 Broadway St., S. E., Cleveland, Ohio, rec. by A. B. Ejbl and W. D. Walters.

S. S. No. 101. John Samuel Geller, Box 65, Dalhart, Texas, rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 102. Edward Liebson, 165 Norfolk St., New York, N. Y., rec. by H. Zwillan and S. Berner.

S. S. No. 103. N. Aloysius Kaiser, Millburn Ave., Millburn, N. J., rec. by A. F. Marguier and F. W. Geimer.

S. S. No. 104. John Ernest Hjalmar Line, Box 193, Gilbert, Minn., rec. by R. T. Dukelow and G. H. Kopp.

S. S. No. 105. Daniel Windsor Hall, Main St., Halliday, N. D., rec. by Fred. W. Hall and W. D. Walters.

S. S. No. 106. Theodore A. Tiegen, Davenport, N. D., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 107. Charles Homer Hess, Blunt, S. D., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 108. Albert Oscar Bittner, Cresbard, S. D., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 109. John L. Ostlund, Kerkhoven, Minn., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 110. Robert Kenneth Young, 206 W. 34th St., New York, N. Y., rec. by L. W. Steiger and Hugo H. Schaefer.

S. S. No. 111. Morris Aaron Aarons, 437 Atlantic Ave., Atlantic City, N. J., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 112. William Perry Taylor, Depew, Okla., rec. by Frank H. Freericks and J. W. England.

S. S. No. 113. Ambrose Frederick Gunsofus, Jr., 161 Daley Ave., Detroit, Mich., rec. by E. R. Jones and Walter M. Chase.

S. S. No. 114. Arthur Edwin Anderson, 39 Myrtle St., Jamestown, N. Y., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 115. Atmore Beach, 1558 Canton Ave., Detroit, Mich., rec. by E. R. Jones and W. M. Chase.

S. S. No. 116. Rudolph H. Blair, 567 Coplin Ave., Detroit, Mich., rec. by E. R. Jones and W. M. Chase.

S. S. No. 117. Frank M. Allen, 175 E. Adams Ave., Apt. No. 1, Detroit, Mich., rec. by E. R. Jones and W. M. Chase.

S. S. No. 118. Leo Frank Cieszkowski, 6206 Fleet Ave., S. E., Cleveland, O., rec. by Edward Spease and A. L. Flandermeyer.

S. S. No. 119. Louis Nicholas Varga, 6305 Sargent Ave., Cleveland, O., rec. by Edward Spease and A. L. Flandermeyer.

S. S. No. 120. Arthur Cyril Lechner, 8225 Woodland Ave., Cleveland, Ohio, rec. by Edward Spease and A. L. Flandermeyer.

S. S. No. 121. Leo Vernando Coble, 78 Belvidere Way, Akron, Ohio, rec. by Edward Spease and A. L. Flandermeyer.

S. S. No. 122. John Arthur Casper, R. D. No. 3, Canton, Ohio, rec. by Edward Spease and A. L. Flandermeyer.

S. S. No. 123. William Lewis Arscott, 107 Chase St., Elyria, Ohio, rec. by Edward Spease and A. L. Flandermeyer.

S. S. No. 124. Emanuel Maurice Cooper, 5178 Parkside Ave., Phila., Pa., rec. by Samuel Blanc and W. D. Walters.

S. S. No. 125. Carl Albert Hagberg, Kenmare, N. D., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 126. Jerck Nicholas Casavis, 305 W. 40th St., New York, N. Y., rec. by Frank H. Freericks and J. W. England.

S. S. No. 127. Achille Granatelli, 1983 Crotona Ave., Bronx, New York, N. Y., rec. by Frank H. Freericks and J. W. England.

S. S. No. 128. Samuel John Price, 2816 Pearl St., Lorain, Ohio, rec. by Frank H. Freericks and J. W. England.

S. S. No. 129. James Parks Kimsey, Main St., Ducktown, Tenn., rec. by F. M. Roberts and J. E. Snow.

J. W. ENGLAND, *Secretary.*

415 N. 33RD ST.

A. PH. A. COUNCIL LETTER NO. 9.

PHILADELPHIA, December 2, 1919.

To the Members of the Council:

Motion No. 14 (*Election of Soldier and Sailor Members*). You are requested to vote on the following applications for soldier and sailor membership:

S. S. No. 130. Joseph Hyde McCormac, 1440 E. 75th Pl., Chicago, Ill., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 131. Harlan Leo Jenkins, 6539 S. Sangamon St., Chicago, Ill., rec. by Frank H. Freericks and J. W. England.

S. S. No. 132. Paul Elzevir Barton, 3210 Arthington St., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 133. William Paul Brann, 6459 Cottage Grove Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 134. Daniel Brodsky, 3224 Park Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 135. William Edwin Brown, 1637 Hampshire St., Quincy, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 136. Harrold Leslie Card, 822 Lincoln Ave., Valparaiso, Ind., rec. by Wm. Gray and E. H. Wisner.

S. S. No. 137. Allie Thomas Carpenter, 458 Greenwich St., Valparaiso, Ind., rec. by E. H. Wisner and Wm. Gray.

S. S. No. 138. Rollin L. Cate, 1112 N. Madison St., Streator, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 139. John Benjamin Cook, Goodland, Ind., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 140. Moses Phillip Cavnot, 4147 Ellis Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 141. Olin Culbertson, 351 Garfield Ave., Valparaiso, Ind., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 142. Felix Czysz, 608 Union St., Valparaiso, Ind., rec. by Wm. Gray and E. H. Wisner.

S. S. No. 143. Julian Dabrowski, Valparaiso Univ., Valparaiso, Ind., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 144. Daniel J. Doherty, 5748 West Lake St., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 145. Ira Isadore Eisenberg, 1651 S. Ridgeway Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 146. Charles James Foucek, 1801 S. Racine Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 147. Benjamin Friedlander, 1917 S. St. Louis Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 148. Leo Kyrone Glynn, 1428 Congress St., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 149. William Gollub, 4630 N. Francisco Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 150. Paul C. Grossmann, 538 S. Locust St., Pana, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 151. Seward Haise Guinter, 4250 W. 21st Pl., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 152. Clyde Daniel Hanes, 5400 Maryland Ave., Chicago, Ill., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 153. Harry J. Jensen, 1526 N. Western Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 154. Zdenck Koller, 2119 S. Turner Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 155. Armin Paul Maag, 3573 Cottage Grove Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 156. Raymond Mahaffy, 7245 Vernon Ave., Chicago, Ill., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 157. Stanley Edward McBride, 1531 W. Adams St., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 158. Lloyd Allen McDonald, 598 E. Main St., Marion, Ill., rec. by E. H. Wisner and Wm. Gray.

S. S. No. 159. Elmer William McLaughlin, 6459 Cottage Grove Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 160. Fayette Oscar Merrill, 239 Graceland, Des Plaines, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 161. Frank James Merlak, 1817 W. 22nd Pl., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 162. George Legrand Moore, Spindler Hall, Valparaiso, Ind., rec. by E. H. Wisner and Wm. Gray.

S. S. No. 163. Hans Charles Pahl, Albany & Barry Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 164. Clyde M. Pate, 1515 W. Monroe St., Chicago, Ill., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 165. Arch K. Patton, 458 Greenwich Ave., Valparaiso, Ind., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 166. Arthur W. Peetz, 701 S. Kedzie Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 167. Arthur Ferdinand Peterson, 507 Union St., Valparaiso, Ind., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 168. Sidney Schmidt, 1635 S. Central Park Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 169. James M. Smith, 507 Main St., Valparaiso, Ind., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 170. Harold Adam Shoemaker, 357 College Ave., Valparaiso, Ind., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 171. Jerome Kriebel Shultz, 257 College Ave., Valparaiso, Ind., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 172. Joseph Louis Petranek, 1325 N. 18th St., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 173. William J. Ponder, Spindler Hall, Valparaiso, Ind., rec. by E. H. Wisner and Wm. Gray.

S. S. No. 174. Herbert Skoglund, 416 W. 60th Place, Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 175. Cyrenus Lee Sickmon, 2168 Sunnyside Ave., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 176. Dale D. Sparks, 607 E. Chicago St., Valparaiso, Ind., rec. by Wm. Gray and E. H. Wisner.

S. S. No. 177. George Anton Subert, 2405 S. Troy St., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 178. Clarence H. Tanner, 501 E. 43rd St., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 179. Athol L. Waggoner, 4100 W. Madison St., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 180. Edward Fane Larner, 411 Pine Bluff St., Paris, Texas, rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 181. Raymond R. Allen, 1515 W. Monroe St., Chicago, Ill., rec. by Wm. Gray and E. N. Gathercoal.

S. S. No. 182. William Kilian Ansorge, 4195 E. Jefferson Ave., Grosse Pt., Mich., rec. by Wm. B. Day and C. M. Snow.

S. S. No. 183. Louis Karel, 3634 W. 26th St., Chicago, Ill., rec. by Frank H. Freericks and J. W. England.

S. S. No. 184. Gerald Gilbert Bundy, 253 W. 64th St., Chicago, Ill., rec. by Frank H. Freericks and J. W. England.

S. S. No. 185. Gustave Miller Blanchet, 3558 S. State St., Chicago, Ill., rec. by Frank H. Freericks and J. W. England.

S. S. No. 186. Alphonse P. Ferring, 2839 Cottage Grove Ave., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

S. S. No. 187. Florian Budock, 3609 N. Kedvale Ave., Chicago, Ill., rec. by John J. Urban and Frank H. Freericks.

S. S. No. 188. John Charles Hyatt, 95 Otis St., E. Cambridge, Mass., rec. by Frank H. Freericks and J. W. England.

S. S. No. 189. Evarts Walton Morrow, 130 South Ave., Petersburg, Va., rec. by T. F. Kuock and C. L. Guthrie.

S. S. No. 190. Robert J. Burton, 1306 Girard Ave., Phila., Pa., rec. by Charles H. LaWall and E. H. Hessler.

J. W. ENGLAND, *Secretary.*

415 N. 33RD ST.

A. PH. A. COUNCIL LETTER NO. 10

PHILADELPHIA, December 6, 1919.

To the Members of the Council:

At the first session of the Section on Commercial Interests for 1918–19, held at New York on August 28, 1919, Chairman E. Fullerton Cook made the following recommendation in his address:

"I, therefore, suggest that the Section recommend to the Council of the A. Ph. A., that a

committee be appointed to prepare copy for a textbook on commercial pharmacy, using such material as may be available from papers presented to the Association or this Section, during this and former years, of course, giving due credit, and adding what may be necessary, and that the Association then publish this book for use in the commercial departments of our colleges of pharmacy and for general sale. It is further recommended that any profit derived from its sale be used for the publicity work of the Association."

The address, with its recommendations (which is given in full in the JOURNAL for November, 1919, 955) was referred to a committee and the latter recommended that the matter be referred to the Council for its consideration, which was done.

The recommendation, however, was not presented to the New York meetings of the Council, and it is here and now submitted.

What is the wish of the Council?

J. W. ENGLAND, *Secretary.*

415 N. 33RD ST.

A. PH. A. COUNCIL LETTER NO. 11.

PHILADELPHIA, December 12, 1919.

To the Members of the Council:

The following budget of appropriations for 1920 is submitted by the Committee on Finance:

PROPOSED BUDGET OF APPROPRIATIONS FOR 1920.

Appropriations for General Expenses:

No. 1.	Salaries	$ 6400.00
No. 2.	Printing, Postage and Stationery	1000.00
No. 3.	Clerical Expenses, Secretary's office	416.00
No. 4.	Clerical Expenses, Treasurer's office	250.00
No. 5.	Miscellaneous Expenses	300.00
No. 6.	Stenographers	350.00
No. 7.	Traveling Expenses	650.00
No. 8.	Committee on Membership	500.00
No. 9.	Committee on Unofficial Standards	100.00
No. 10.	Year Book	4000.00
No. 11.	Premium on Treasurer's Bond	62.50
No. 12.	Auditing Treasurer's Books	60.00
No. 13.	National Drug Trade Conference	200.00
No. 14.	Section on Scientific Papers	25.00
No. 15.	Section on Education and Legislation	25.00
No. 16.	Section on Commercial Interests	25.00
No. 17.	Section on Practical Pharmacy and Dispensing	25.00
No. 18.	Section on Historical Pharmacy	25.00
No. 19.	Women's Section	25.00
No. 20.	National Syllabus Committee	25.00
No. 21.	Committee on Recipe Book	50.00
No. 22.	Committee on Local Branches	25.00
		$14538.50

Appropriations for Open Accounts:

No. 23.	Journal	$8250.00		
	(*a*) Publication	$7000.00		
	(*b*) Clerical Expenses.	800.00		
	(*c*) Postage & Stationery	300.00		
	(*d*) Freight, Drayage, Miscellaneous	150.00		
No. 24.	National Formulary		1000.00	
No. 25.	Badges and Bars		50.00	
No. 26.	Certificates		50.00	
			$9350.00	
				9350.00
				$23888.50

Do you approve of Budget of Appropriations for 1920 as above proposed? This will be regarded as *Motion No. 15 (Approval of Budget of Appropriations for 1920).*

J W. ENGLAND, *Secretary.*

415 N. 33RD ST.

A. PH. A. COUNCIL LETTER NO. 12.

PHILADELPHIA, December 13, 1919.

To the Members of the Council:

Motion No. 16 (Election of Active Members). You are requested to vote on the following applications for active members:

No. 97. Robert J. Woods, Winnett, Montana, rec. by Wm. B. Day and J. W. England.

No. 98. David Grossmann, 85 Greenwich Ave., New York, N. Y., rec. by H. H. Schaefer and Leon Lascoff.

No. 99. Paul Douglass Carrol, 1603 Maple St., Taxarkana, Texas, rec. by Frank Schachleiter and M. A. Eisele.

No. 100. Florence Margaret Ryan, 404 Beech Ave., Elmwood Place, Ohio, rec. by Charles A. Apmeyer and J. Ferd. Zuenkeler.

No. 101. Solon Nathaniel Blackberg, College Station, Texas, rec. by Wm. B. Day and J. W. England.

No. 102. Dr. George Stamatopoulos, Syrian Prot. College, Beirut, Syria, rec. by Edgar L. Patch and James A. Patch.

No. 103. Rolland J. Gilbert, 32 Adams Ave., W., Detroit, Mich., rec. by Leonard A. Seltzer and A. Alton Wheeler.

No. 104. John E. Williams, 32 Adams Ave., W., Detroit, Mich., rec. by Leonard A. Seltzer and A. Alton Wheeler.

No. 105. Eduardo Castillo y Alisangco, cr. Philippine Genl. Hospital, Manila, Philippine Islands, rec. by E. G. Eberle and J. W. England.

No. 106. Dayid Coleman, 534 Reed St., Phila., Pa., rec. by Charles H. LaWall and Jos. W. E. Harrisson.

No. 107. Oscar William Schaefer, 2805 Highland Ave., Cincinnati, O., rec. by Charles A. Apmeyer and Ferd. Zuenkeler.

No. 108. John Henry Kohl, 1902 Vine St., Cincinnati, Ohio, rec. by Chas. A. Apmeyer and J. Ferd. Zuenkeler.

No. 109. Harold Speight Overman, Cor. Water & Matthews Sts., Elizabeth City, N. C., rec. by J. G. Beard and E. V. Howell.

No. 110. Clyde Eubanks, Chapel Hill, N. C., rec. by J. G. Beard and E. V. Zoeller.

No. 111. John Alonzo Goode, cr. Goode's Drug Store, Asheville, N. C., rec. by J. G. Beard and E. V. Zoeller.

No. 112. William Alonzo Crabtree, Hawkins Ave., Sanford, N. C., rec. by J. G. Beard and E. V. Zoeller.

No. 113. George Kenneth Granham, 203 Divine St., Dunn, N. C., rec. by J. G. Beard and E. V. Zoeller.

No. 114. Joseph Key Brown, Cor. Evans & 5th Sts., Greenville, N. C., rec. by J. G. Beard and E. V. Zoeller.

No. 115. John Leland Henderson, Burlington, N. C., rec. by J. G. Beard and E. V. Zoeller.

Motion No. 17 (Election of Soldier and Sailor Members). You are requested to vote on the following applications for soldier and sailor membership.

S. S. No. 191. Benjamin Rosenberg, 672 Tinton Ave., New York, N. Y., rec. by Hugo H. Schaefer and Hugo Kantrowitz.

S. S. No. 192. William A. Black, 305 Washington Ave., Brooklyn, N. Y., rec. by Ray W. Schoetzow and Allan L. Ritch.

S. S. No. 193. Arthur Leo Zagat, 850 E. 156th St., New York, N. Y., rec. by Max Soskin and S. Kopald.

S. S. No. 194. Aaron Mazeloff, 1007 S. Boulevard, New York, N. Y., rec. by D. R. Mantell and Hugo H. Schaefer.

S. S. No. 195. George Bruns, Jr., 232 8th Ave., New York, N. Y., rec. by Hugo H. Schaefer and Hugo Kantrowitz.

S. S. No. 196. Ernest Orestes Bianco, 607 E. 182nd St., New York, N. Y., rec. by Jacob Diner and P. Eichler.

S. S. No. 197. Charles Irwin Shaw, 344 St. Anns Ave., New York, N. Y., rec. by Lewis Brown and Curt P. Wimmer.

S. S. No. 198. William Hartwell Taylor, Mena, Ark., rec. by J. G. Jackson and H. E. Manning.

S. S. No. 199. George Gaston Patin, Breaux Bridge, La., rec. by Frank S. Harvey and W. D. Walters.

S. S. No. 200. Ernest Fay Sherry, Lock Box No. 66, Morristown, Ind., rec. by W. L. Parrish and W. D. Walters.

S. S. No. 201. Clarence John Ebert, 1 W. Grant St., Marshalltown, Iowa, rec. by Henry S. Mayer and Chas. Stepan.

S. S. No. 202. Louis Swift Stuart, 521 E. N. Y. St., Indianapolis, Ind., rec. by H. G. Zimmerman and E. H. Enners.

S. S. No. 203. Will N. Blair, Heavener, Okla., rec. by J. D. Fowler and W. D. Walters.

S. S. No. 204. Allen Joseph Giles, 80 Huntington Ave., Boston, Mass., rec. by W. D. Monill and H. Shynich.

S. S. No. 205. Raphael Taub, 3291 Boulevard, Jersey City, N. J., rec. by D. Lupo and E. Weiss.

S. S. No. 206. Edward Leslie Costellow, 30 Sawin St., Marlboro, Mass., rec. by J. G. Godding and T. J. Bradley.

S. S. No. 207. Charles Worden Sanford, 320 Mechanic St., Marlboro, Mass., rec. by John G. Godding and T. J. Bradley.

S. S. No. 208. Charles B. Caldwell, 304 Central Ave., Hot Springs, Ark., rec. by M. A. Eisele and Frank Schachleiter.

S. S. No. 209. Rae W. Newbold, Siloam Springs, Ark., rec. by M. A. Eisele and Frank Schachleiter.

S. S. No. 210. Raymond Thomas Nolan, 1604 Melso St., Cavour, S. D., rec. by W. D. Walters and J. W. England.

S. S. No. 211. Harold Merz, 521 Field Ave., Detroit, Mich., rec. by Walter M. Chase and W. D. Walters.

S. S. No. 212. Andrew Anthony Carter, 59 Kipling Ave., Detroit, Mich., rec. by Walter M. Chase and W. D. Walters.

S. S. No. 213. Mitchell Markowski, 83 Columbia, W., Detroit, Mich., rec. by Walter M. Chase and W. D. Walters.

S. S. No. 214. Victor Louis Bechtold, 316 Joseph Campeau Ave., Detroit, Mich., rec. by Walter M. Chase and W. D. Walters.

S. S. No. 215. Harold McCann, 59 11th St., Detroit, Mich., rec. by Walter M. Chase and W. D. Walters.

S. S. No. 216. Glenn Arthur Little, 1219 Brooklyn Ave., Detroit, Mich., rec. by Walter M. Chase and W. D. Walters.

S. S. No. 217. Titus Dixon Keillor, Jr., 401 Bagg St., Detroit, Mich., rec. by Walter M. Chase and W. D. Walters.

S. S. No. 218. Clarence Dodds, Post Hospital, Ft. Leavenworth, Kans., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 219. Webb Youngblood, 1816 Thayer Ave., Little Rock, Ark., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 220. William G. Nichols, Post Hospital, Ft. Leavenworth, Kans., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 221. Eugene Crawford White, Post Hospital, Leavenworth, Kans., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 222. George Edward Lindow, Ft. Leavenworth, Kans., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 223. Ernest Irvin Johnson, 1000 French St., Wilmington, Del., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 224. Irvin E. Lehr, 46 S. Market St., Shamokin, Pa., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 225. William Ellis Sloan, Post Hospital, Ft. Leavenworth, Kans., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 226. Joseph P. Yaffe, 193 Chambers St., Boston, Mass., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 227. Harold E. Meyer, Twin Valley, Minn., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 228. Harry L. Block, 638 W. 18th St., Chicago, Ill., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 229. Morris Davison, 1735 Washington Ave., Bronx, N. Y., rec. by W. D. Walters and R. P. Fischelis.

J. W. ENGLAND, *Secretary.*
415 N. 33RD ST.

A. PH. A. COUNCIL LETTER NO. 13.

PHILADELPHIA, December 15, 1919.

To the Members of the Council:

Robert P. Fischelis, Chairman of the World War Veterans Section, submits the following report:

"When it was proposed at the annual meeting of the American Pharmaceutical Association in New York that the World War Veterans Section undertake an active campaign to bring all former soldier and sailor pharmacists into the Association, the newly created Section undertook this work willingly and after due consideration asked for an appropriation of $2,000.00 to carry out the work during the year. This request was considered by a special committee appointed by the Council and later, at the final session, the Association voted to grant an appropriation of $500.00 for a period of three months, with the understanding that subsequent appropriations be made at the discretion of the Council, if the work of the first three months was sufficiently encouraging and showed a return for the money expended.

"The first three months have been busy ones for the officers of the new Section and it has been an up-hill battle to get things on a workable basis. The Secretary of the Section is now located permanently at the Post Hospital, Fort Leavenworth, Kansas, and has abundant time and facilities at his command to care for all correspondence and other work connected with the Secretary's office. In the past three months the Secretary has labored under considerable difficulties, partly because of the unsettled status of this Section which has now been definitely established and partly because of more or less disturbance in his personal affairs. He now has ready over three thousand letters to go to prospective members whose addresses have been secured through numerous agencies throughout the country, with considerable effort. These letters will be mailed, together with a reprint from the October issue of the JOURNAL, carrying the report of the organization of the World War Veterans' Section and the By-Laws, etc.

"The first appropriation of $500.00 has been exhausted by the necessary work to get the Section organized. The Secretary is being allowed $25.00 a month compensation and he has been getting along with a half-time stenographer at the rate of about $10.00 a week. There have been large printing bills for letterheads, envelopes, reprints, multigraphing, etc. There have also been bills for expressage and postage. It further became necessary for the Chairman of the Section to make a trip to Detroit, Chicago and Cincinnati in the interests of the Section. He attended the Detroit and Chicago branch meetings and about twenty-five members were secured as a result of this trip. However, next to the propaganda work accomplished on this trip, its most important factor was the meeting of the Chairman and Secretary and Frank H. Freericks, the Chairman of the Advisory Committee for Soldier and Sailor Pharmacists, in Cincinnati, to thresh out certain details in the management of the work of the Section which could not have been taken care of in any other way. Matters were so arranged that the Chairman arrived in Cincinnati before the Secretary left for his new duties at Fort Leavenworth, Kansas, and an entire day was spent in planning future work and solving the problems which have thus far arisen.

"Bearing the above activities in mind, it is not very difficult to see what has been done with the first $500.00 spent in 1919, and it is also not difficult to see that if we are to get the fruit of the expenditure and labor involved, further appropriations must be made in order that the Section may carry on. It is estimated that we will need in 1920 $500.00 to carry us up to March 1st; $500.00 more to June 1st, and $500.00 for the balance of the year.

"The total number of members of the A. Ph. A. thus far secured through the World War Veterans Section numbers 371. This is no criterion of the number which will come in in the next three months because as has been explained, most of our time has been devoted to locating the men and spreading the propaganda. The next three months will bring them into the Association.

"We, therefore, respectfully urge the members of the Council to give further support to this work and help us by their financial aid to accomplish the object which we have set out to achieve."

J. W. ENGLAND, *Secretary.*
415 N. 33RD ST.

A. PH. A. COUNCIL LETTER NO. 14.

PHILADELPHIA, December 16, 1919.

To the Members of the Council:

Clyde M. Snow writes:

"Replying to Council Letter No. 10, I am opposed on principle to the Association entering the textbook field. If it should publish a textbook on commercial pharmacy there is

no reason at all for ending the effort there.

"Further, it would require too liberal an interpretation of Article I of the Constitution to make such action compatible with the aims of the Association."

Wm. B. Day writes:

"I have Council Letter No. 10. I sympathize with Professor Cook's idea to utilize the splendid papers that have been presented to the Commercial Section for the preparation of the textbook on commercial pharmacy. Although there is already a fairly well-known textbook on this subject to be had, yet, no doubt, a work such as proposed by Chairman Cook would be very useful, and the subject is one that schools of pharmacy must carefully consider with a view to introducing it as a strong course when opportunity affords, but, in spite of these considerations, it appears to me that we are going out of our field when we undertake the preparation of textbooks.

"It is true that we now issue a national standard—the National Formulary—and that we are planning to issue a recipe book which will also be in the nature of a standard, but neither of these is primarily a textbook.

"I am, therefore, opposed to the appointment of a committee to prepare a textbook on commercial pharmacy, though I should not oppose the appointment of a committee to consider whether such a textbook should be prepared and to report back to the Council."

Charles H. LaWall writes:

"With regard to the recommendation in Chairman Cook's address, that the material available in the proceedings and JOURNAL of the Association be utilized in preparing copy for a textbook on commercial pharmacy, I feel that it would be advisable first to have Professor Cook present some kind of a synopsis or outline of the book as he visualizes it.

"If he is willing to do this, which could be done by assembling in some kind of systematic arrangement the material which he considered of value in this connection, I feel that we shall have some basis on which to judge of the advisability of the proposed plan."

E. A. Ruddiman writes:

"I feel the need of a good textbook on commercial pharmacy. I have not seen any that is satisfactory and I have hoped that someone well qualified would write one. I am, however, strongly opposed to this being undertaken by the A. Ph. A. The Association has no business, I might say no right, to use its funds in this way. There is no occasion for it. The book might or might not be a success. Some one will some day write a good book which will be published by a regular book company. I would vote against the recommendation."

S. L. Hilton writes:

"In reply to your Letter No. 10, it seems to me the recommendation of Prof. Cook should be carefully considered, there is much valuable information that has been presented and can be used in such a publication as he has suggested and that would be available and useful for students, but is this the proper time for such a publication when everything is soaring and labor has gone wild and making all kinds of demands? I think such a publication could be well looked into by a committee, necessary data and information collected and compiled and publication deferred until a more propitious time."

F. E. Stewart writes:

"In regard to the recommendation made by Prof. E. Fullerton Cook, in his address as chairman of the Section on Commercial Interests of the A. Ph. A., at the New York meeting, August 28, 1919, it seems to me that the suggestion of a textbook in Commercial Pharmacy is a good one; the book is needed—but its publication by the Association may establish an undesirable precedent; at all events, the suggestion should have careful consideration before adoption, if adopted, and I move that the question be referred to the Executive Committee for consideration and report."

Lucius E. Sayre writes:

"I have your letter No. 10, in which you refer to Chairman E. Fullerton Cook's recommendation given in his address August 28, 1919. You quote this recommendation and refer to the address and recommendation given in full in the JOURNAL for November, 1919, page 955.

"Permit me to say that I am decidedly in favor of the Association taking up this enterprise of publishing a text (book) on Commercial Pharmacy, but I hesitate to recommend the assigning to a 'committee' the compilation of such a work. I am thoroughly convinced in my own mind that E. Fullerton Cook should be asked to act as chairman of a group of authors (editor-in-chief, if you please). The book should be published as a symposium under the auspices of the A. Ph. A. I think it should also include the legal as well as the business aspects of Pharmacy. Professor Cook is thoroughly capable of editing such a work and also of gathering around him such

authorities as are capable and who would be able to glean from the papers available and presented to the Association during former years material that would be acceptable in such a work. If Professor Cook could be persuaded to accept this responsibility, he should be allowed an honorarium which could be determined by the Council. I know it is a good deal to ask of Professor Cook, but I believe we should center responsibility in one man and one in whom we should have confidence. Due credit, of course, should be given other authors contributing to this symposium. I feel quite sure that somewhat of a parallel can be found in some of our medical publications.

"Now, I believe this enterprise, authorized by the Association, would be one of the greatest constructive pieces of work in which we could be engaged at present and I heartily endorse the scheme.

"Would it not be well to have the Executive Committee of the Council take up this matter in its coming meeting and prepare some recommendations for speedy action?"

Motion No. 18 (Textbook on Commercial Pharmacy). Moved by F. E. Stewart, seconded by E. G. Eberle, that the suggestion of a textbook on Commercial Pharmacy, made by Prof. E. Fullerton Cook, be referred to the Executive Committee for consideration at its coming meeting and report to the Council.

J. W. ENGLAND, *Secretary.*

415 N. 33RD ST.

A. PH. A. COUNCIL LETTER NO. 15.

PHILADELPHIA, December 16, 1919.

To the Members of the Council:

R. P. Fischelis writes:

"With reference to Council Letter No. 10 and the recommendation of Chairman E. Fullerton Cook of the Commercial Section that a committee be appointed to prepare copy for a textbook on commercial pharmacy, I wish to make the following comment:

"Undoubtedly, Professor Cook's recommendation was prompted by the present lack of a proper textbook on commercial pharmacy which treats the subject not merely from a chain store or straight business viewpoint, but also from the point of view of the profession of pharmacy. Every teacher of commercial pharmacy has undoubtedly felt the need of such a textbook, but I doubt the advisability of appointing a committee to carry on for the American Pharmaceutical Association an enterprise which really encroaches upon a field that the Association could very well leave alone. It is undoubtedly the desire of the American Pharmaceutical Association to encourage authors and to guide them by calling attention to various shortcomings in existing texts, however, it seems to me that it is not the function of an Association to assume the rôle of a publishing house.

The purpose of Professor Cook's recommendation could possibly be served by appointing a committee of teachers of commercial pharmacy to outline the contents of a text which they as teachers in colleges of pharmacy could approve and thus furnish a guide to writers of texts on commercial pharmacy.

"I trust the matter will be fully discussed before any definite step is taken to dispose of it."

Motion No. 19 (Election of Soldier and Sailor Members). You are requested to vote on the following applications for soldier and sailor membership:

S. S. No. 230. Karl Louis Otto, 652 College Ave., Pittsburgh, Pa., rec. by J. D. Loughridge and C. E. Stump.

S. S. No. 231. Calvin E. Cade, 1712 Main St., Parsons, Kans., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 232. John Aloysius Rossiter, 804 Ninth St., N. E., Washington, D. C., rec. by Lewis Flemer and S. L. Hilton.

S. S. No. 233. Henry Lewis Flemer, 3103 18th St., N. W., Washington, D. C., rec. by Lewis Flemer and S. L. Hilton.

S. S. No. 234. Harry W. Tuft, Apt. 406, 1526 17th St., N. W., Washington, D. C., rec. by Lewis Flemer and S. L. Hilton.

S. S. No. 235. Maurice G. Weinstein, 462 Jackson St., Milwaukee, Wis., rec. by E. H. Thatcher and W. D. Walters.

S. S. No. 236. Charles Harvey Wilson, Caliente, Nevada, rec. by J. D. Van Vleet and W. D. Walters.

S. S. No. 237. Lester R. Bengel, 62 Hoyt St., Buffalo, N. Y., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 238. Karl Hobart Roatch, 2444 South Bancroft St., Phila., Pa., rec. by E. Fullerton Cook and Ivor Griffith.

S. S. No. 239. Godfrey Harry van Allen, 210 S. Broad St., Mobile, Ala., rec. by H. H. Van Ader and Thos. S. Van Aller.

S. S. No. 240. Carson Henderson Brady, 2508 Beale Ave., Altoona, Pa., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 241. Gustav G. Dembling, 1324 5th Ave., New York, N. Y., rec. by J. J. Rooney and Wm. Dembling.

S. S. No. 242. Daniel Shirley Nichols, Harper's Ferry, W. Va., rec. by Walter E. Leitmeyer and W. D. Walters.

S. S. No. 243. Claude Lenord Hill, Colonial Pharmacy, Springfield, Mo., rec. by A. Lippman and C. E. Denton.

S. S. No. 244. Albert Sommerness, Glendive, Mont., rec. by P. A. McAndrew and W. D. Walters.

S. S. No. 245. Robert John Corkery, 585 Adams St., East Milton, Mass., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 246. Anton J. Soeha, 258 Ogden Ave., Milwaukee, Wis., rec. by E. H. Thatcher and W. D. Walters.

S. S. No. 247. James W. Dodson, Scranton, Ark., rec. by M. A. Eisele and F. Schachleiter.

S. S. No. 248. George W. Wilhelm, Walnut & Electric Ave., Southgate, Ky., rec. by Chas. A. Apmeyer and D. E. Murphy.

S. S. No. 249. Edmond deBerry Ledbetter, 26 South Tryon St., Charlotte, N. C., rec. by Jas. P. Stowe and H. C. Williams.

S. S. No. 250. Lambert Nathaniel Wenner, Roseaw, Minn., rec. by Chas. A. Apmeyer and D. E. Murphy

S. S. No. 251. John Baxter Meade, New Vienna, Ohio, rec. by Chas. A. Apmeyer and D. E. Murphy.

S. S. No. 252. Francis A. Federer, 326 East Ave., Waukesha, Wis., rec. by Edward Voss, Jr., and Chas. A. Apmeyer.

S. S. No. 253. Oscar C. Reifschneider, 2419 Symmes St., Cincinnati, Ohio, rec. by Edward Voss, Jr. and Chas. A. Apmeyer.

S. S. No. 254. Andreas Alexander Naegeli, cr. Bridgeman Drug Co., Great Falls, Mont., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 255. Samuel Howard Chester, 400 Sutter Ave., Brooklyn, N. Y., rec. by I. Hambayer and M. Gunnan.

S. S. No. 256. Edward Augustus Mundorff, 273 Grand Ave., Brooklyn, N. Y., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 257. Clyde C. Caillet, Johnstown, Colo., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 258. Glen Christopher Bushby, 4548 Sheridan Road, Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

S. S. No. 259. Louis Ralston Weiss, 7809 N. Hermitage Ave., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

S. S. No. 260. Bley Clifford Grant, Worden, Ill., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 261. Bert Barnet Hershenson, 444 Bryant St., Malden, Mass., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 262. Cabell W. Rady, 701 Bacon Rd., Richmond, Va., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 263. Israel Abraham Hoberman, 15 Suffolk St., Malden, Mass., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 264. William Cecil Hodgron, Box 147, Riverdale, Md., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 265. Morrison Frederick Raymond, Kingsville, Ohio, rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 266. Joseph Charles Prote, Jr., 579 Bainbridge St., Brooklyn, N. Y., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 267. Emil C. Norwood, 3 West 69th St., New York, N. Y., rec. by Frank T. Green and J. N. Bower.

S. S. No. 268. Uffo Knudsen, 802 Linwood Ave., Valparaiso, Ind., rec. by E. H. Wisner and W. D. Walters.

S. S. No. 269. Edmund Grant Keys, 802 Linwood Ave., Valparaiso, Ind., rec. by E. H. Wisner and R. P. Fischelis.

S. S. No. 270. Chester Herbert Wood, 454 Greenwick St., Valparaiso, Ind., rec. by E. H. Wisner and W. D. Walters.

S. S. No. 271. Archibald MacDonald, Box 6, 468 College Ave., Valparaiso, Ind., rec. by E. H. Wisner and W. D. Walters.

S. S. No. 272. Stanley Broderick, Valparaiso, Ind., rec. by E. H. Wisner and W. D. Walters.

S. S. No. 273. Jaroslav Roberts Madera, 5141 S. Lincoln St., Chicago, Ill., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 274. Robert Carl Peterson, 112 Tyndale St., Roslindale, Mass., rec. by John G. Godding and Theo. J. Bradley.

S. S. No. 275. Ernest Kingdon Rains, 156 James St., Sault Ste. Marie, Ontario, rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 276. George P. Eichhorst, 2258 N. Clark St., Chicago, Ill., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 277. Walter Raymond Fallon, 5632 S. Green St., Chicago, Ill., rec. by W. B. Day and E. N. Gathercoal.

S. S. No. 278. Fred O. Petikan, 2601 Lawndale Ave., S., Chicago, Ill., rec. by Alice E. Pekin and Louis Karel.

S. S. No. 279. Joseph Martin Feeney, 7435 Evans Ave., Chicago, Ill.

Please correct the statement that "twenty-five members were secured, etc.," in fourth paragraph of Council Letter No. 13, 29, to read "seventy-five members, etc."

The total number of S. and S. members obtained to date are 421.

J. W. ENGLAND, *Secretary.*

415 N. 33RD ST.

A. PH. A. COUNCIL LETTER NO. 16.

PHILADELPHIA, December 24, 1919.

To the Members of the Council:

Motion No. 12 (Election of Active Members; applications Nos. 39 to 96 inclusive). Motion No. 13 (Election of Soldier and Sailor Members; applications Nos. 69 to 129 inclusive). Motion No. 14 (Election of Soldier and Sailor Members; applications Nos. 130 to 190 inclusive). Motion No. 15 (Approval of Budget of Appropriations for 1920). Motion No. 16 (Election of Active Members; applications Nos. 97 to 115 inclusive). Motion No. 17 (Election of Soldier and Sailor Members; applications Nos. 191 to 229 inclusive). Motion No. 18 (Reference of Textbook on Commercial Pharmacy to Executive Committee). Motion No. 19 (Election of Soldier and Sailor Members; applications Nos. 230 to 279 inclusive) have each received a majority of affirmative votes.

R. P. Fischelis, Chairman of World War Veterans Section, writes:

"I will make a motion, which Dr. F. E. Stewart seconds, that a further appropriation of $500.00 be granted the World War Veterans Section to carry on its membership campaign, such appropriation to be for the period ending March 1, 1920.

"Our work will be severely handicapped if we do not get further appropriations."

The above motion has been referred to the Committee on Finance in accordance with the By-Laws of the Council.

F. J. Wulling writes:

"The request for an additional $1500.00 ought to receive careful thought. If the Association had plenty of money I would unhesitatingly vote to let the Section have the money they ask for.

"Concretely it seems that it will cost the A. Ph. A. $2000.00 to give away two or three thousand memberships or possibly more. I still feel as I did when the proposition was first mentioned. The state associations under the direction of an A. Ph. A. central committee could probably have handled this entire S. S. membership campaign with very little expense to the A. Ph. A. I am certain that the Minnesota State Pharmaceutical Association would have been glad to cover Minnesota. Indeed I believe Secretary Newcomb has taken some steps along this line. He gave me an estimate of the expense of sending out two sets of letters to Minnesota Veterans, totaling $23.50. If every State were willing to do

the same thing the total expense would not very much exceed $1000 and would be paid by the State Associations thus saving the A. Ph. A. that much.

"I hesitate in writing this letter because it may seem like a criticism of the work that Dr. Freericks and the W. W. V. Section is doing. This, however, is far from my intention. Splendid work has been done and in an unselfish and enthusiastic way and every credit should be given the workers. The fact is, I believe, that the Association or the Council was not far-sighted enough in the beginning and it may be the Council's duty to see the thing through. I am not quite decided about this."

Clyde M. Snow writes:

"Replying to Council Letter No. 13 requesting the appropriation of further funds for the Soldier and Sailor Membership Campaign, I am unalterably opposed to the appropriation of any funds of the Association for carrying out the proposed campaign in its present status for the following reasons:

"First: The work as it has been carried on is in violation of the by-laws of the Association, for the reason that Articles I, II, III and IV of Chapter VIII of the By-Laws provide specific procedure for membership in the Association. The men admitted as Soldier and Sailor members have complied with none of these requirements. All other members have.

"If the members are admitted under any other conditions it must be under amended by-laws as provided in Article I, Chapter XIV.

"The By-Laws have not been amended in this direction. To attempt to legalize membership as was done in the adoption of Motion No. 30, Council Letters No. 23 and 25 is clearly an evasion of the By-Laws. The adoption of the report of the Council at the General Session of the Association was done under stress of enthusiasm without regard to the legality of the action and if it is allowed to stand, will serve as a precedent for other illegal procedure contravening the Constitution and By-Laws of the Association.

"Second: Mr. W. C. Alpers, during his incumbency as President of the Association, asked for $1500 to carry on a campaign for new *Dues-paying* members, but his application was denied and looked upon as being chimerical. This action should serve as a precedent when an appropriation is asked for to induce men to take *something for nothing*. Particularly should the precedent obtain when the Association affairs are in such condition that ways and means are being discussed to induce those who now hold regular membership to agree to an increase in annual dues.

"Third: There are six regularly organized Sections in the Association none of which is given appropriations exceeding $25 annually. The World War Veterans Section has spent $500 since the meeting of the Association in New York. None of the officers in the six Sections referred to are salaried, which is in strict accord with the tenets of the Association. The Association now has two salaried officers through whom the business of securing new *dues-paying* members may be carried on, the Editor with the aid of the JOURNAL and the General Secretary. In this connection it might be pointed out that more than 500 new *dues-paying* members were elected without the efforts of salaried officers other than those just referred to, during the last year.

"I hope, therefore, that further appropriations to the World War Veterans Section, in its present status, will be denied."

Motion No. 20 (*Election of Active Members*). You are requested to vote on the following applications for active members:

No. 116. Harold Edwin Werkheiser, 713 Bushkill St., Easton, Pa., rec. by Paul B. Anspach and Wm. B. Day.

No. 117. Otto Sienkaemper, 492 Littleton St., West Lafayette, Ind., rec. by Emory J. Yeager and Frank M. Best.

No. 118. Kenneth M. Smith, U. S. Naval Hospital, San Diego, Calif., rec. by H. H. Williamson and W. B. Day.

No. 119. Emil John Hanggi, 1316 McGowan St., Little Rock, Ark., rec. by W. A. Eisele and Frank Schachleiter.

No. 120. Leslie Sylvester Thompson, Box No. 75, Tupelo, Arkansas, rec. by Frank Schachleiter and Wm. B. Day.

No. 121. Willis E. Black, 314 S. Lincoln St., Chicago, Ill., rec. by W. Wilhelm and Z. C. Clarke.

No. 122. L. H. French, Hospital Corps Training School, Naval Training Station, Newport, R. I., rec. by J. W. England and E. G. Eberle.

No. 123. Cuthbert O. Valentine, Havana, Ark., rec. by Frank Schachleiter and Wm. B. Day.

No. 124. James B. Malow, Montrose, Ark., Rec. by Frank Schachleiter and Wm. B. Day.

No. 125. Frederick A. June, 16 Oakview Terrace, Jamaica Plain, Mass., rec. by E. N. Gathercoal and G. L. Anderson.

No. 126. Paul Hawryliw, 703 State St., Perth Amboy, N. J., rec. by Michael Uhorchok and Wm. B. Day.

No. 127. William Edward Kendall, Crawfordsville, Ark., rec. by Frank Schachleiter and Wm. B. Day.

Motion No. 21 (Election of Soldier and Sailor Members). You are requested to vote on the following applications for soldier and sailor membership:

S. S. No. 280. William Curtis Stacey, 918 Fatherland St., Nashville, Tenn., rec. by Ira B. Clark and W. D. Walters.

S. S. No. 281. John Bellew Curran, No. 11 Block V, Pueblo, Colo., rec. by W. E. Blame, Jr., and W. D. Walters.

S. S. No. 282. Samuel Philip Glass, 1535 N. Marshall St., Phila., Pa. rec. by H. E. Maberry and J. Robinson.

S. S. No. 283. Charles George Yarbrough, Monroeville, Ala., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 284. Edward Ruff Justice, 1301 Texas Ave., Shreveport, La., rec. by M. Bernstein and A. F. Meyer.

S. S. No. 285. Everett W. Jones, 600 S. Walnut St., Muncie, Ind., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 286. Edwin Clayton Dille, 1226 E. 113th St., Cleveland, Ohio, rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 287. Earl Elmo Pugh, Tifton, Tift Co., Ga., rec. by W. D. Walters and Frank H. Freericks

S. S. No. 288. Harry William Wilson, 100 E. 2nd St., Ashland, Wis., rec. by N. J. Cramton and E. J. Hoppenyan.

S. S. No. 289. Alexander Doctors, 16 Lewis Ave., Corona, Long Island, N. Y., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 290. Timothy O'Keefe, 1810 3rd Ave., S., Minneapolis, Minn., rec. by T. A. Hoops and J. D. Lewellen.

S. S. No. 291. Partick J. Gavigan, Blanchardville, Wis., rec. by A. McKellar and W. D. Walters.

S. S. No. 292. Earl Clyde Yates, Philadelphia Miss., rec. by E. H. Wisner and W. D. Walters.

S. S. No. 293. George Carl Schiefelbein, 210 E. 5th St., Marshfield, Wis., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 294. Charles Albert Reilly, 5900 Minerva Ave., St. Louis, Mo., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 295. Henry Bernhardt, 2016 Fountain St., Baltimore, Md., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 296. Joseph Frank Corleto, 119 Fairvem Ave., Brookfield, Ill., rec. by E. G. Sallett and E. DeStefano.

S. S. No. 297. Abraham Wyman, 1610 N. 30th St., Phila., Pa., rec. by Philip Goll and F. B. McDowell.

S. S. No. 298. Lawrence Karl Boehme, 46 S. Main St., Germantown, Ohio, rec. by Charles H. LaWall and E. F. Cook.

S. S. No. 299. Sam F. Thompson, Guernsey, Wyoming, rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 300. Arthur Van Hooser, Blytheville, Ark., rec. by B. H. Levy and W. D. Walters.

S. S. No. 301. Clarence Kinney Wagner, 350 South 3rd St., Lehighton, Pa., rec. by Charles H. LaWall and F. P. Stroup.

S. S. No. 302. Mandel Schwartz, 2420 St. Raymonds Ave., Westchester, N. Y., rec. by H. W. Einstein and S. H. Fritz.

S. S. No. 303. John P. Nolan, 4761 N. Clark St., Chicago, Ill., rec. by C. W. Baker and C. H. Woods.

S. S. No. 304. Carl Bernard Giefer, 828 W. 8th St., Superior, Wis., rec by W. D. Walters and Frank H. Freericks.

S. S. No. 305. John Alston Donovan, Deshler, Ohio, rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 306. Charles Cleveland Ferguson, 915 8th St., Huntington, W. Va., rec. by A. D. Conley and J. Shrevely.

S. S. No. 307. Leo M. Wagner, Homer, Neb., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 308. Asher Miller Hawk, 400 First Ave., Parkesburg, Pa., rec. by J. Ralph Greek and W. D. Walters.

S. S. No. 309. Thomas Ilaria, 346 Bloomfield Ave., Newark, N. J., rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 310. Henry Adam Karber, New Athens, Ill., rec. by C. G. Becker and Jacob Hull.

S. S. No. 311. Robie Rolland Weaver, 322 Buckeye St., Akron, Ohio, rec. by W. D. Walters and Frank H. Freericks.

S. S. No. 312. Clifford Charles Blumenstiel, cr. E. J. Morris Drug Co., 412 E. Main St., Alliance, Ohio, rec. by John Stowe and A. J. Morris.

S. S. No. 313. Barton Gerald Brown, 2228 Midland Ave., Syracuse, N. Y., rec. by W. W. Boothe and R. P. Fischelis.

S. S. No. 314. Rex Louis Chamberlin, 136 Main St., Hartford, Mich., rec. by Geo. A. Wilson and G. T. Chamberlin.

S. S. No. 315. Walter Catterfeld, 1602 Tuscola St., Saginaw, Mich., rec. by Hugo Catterfeld and W. D. Walters.

S. S. No. 316. Alfred Keith Folger, 7515 Hampton Ave., Hollywood, Calif., rec. by J. W. Felts and Geo. F. Payne.

S. S. No. 317. Elias Diamandi Zografi, 261 W. 37th St., New York, N. Y., rec. by W. D. Walters and Frank H. Freericks.

J. W. ENGLAND, *Secretary*.

415 N. 33RD ST.

A. PH. A. COUNCIL LETTER NO. 17

PHILADELPHIA, December 29, 1919.

To the Members of the Council:

Motion No. 22 (Election of Soldier and Sailor Members). You are requested to vote on the following applications for soldier and sailor membership:

S. S. No. 318. George Nicolai, 221 Main St., Prineville, Ore., rec. by Wm. B. Day and W. D. Walters.

S. S. No. 319. Earle Jay Marshall, 217 Lowell St., Manchester, N. H., rec. by H. S. Marshall and J. H. Marshall.

S. S. No. 320. William Anthony Huhn, 2448 N. Kildare Ave., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

S. S. No. 321. Arthur Harry Stephen, 4540 N. Hazel Ave., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

S. S. No. 322. Edwin S. Sater, 2716 Gerard Ave., So., Minneapolis, Minn., rec. by E. L. Newcomb and Wm. B. Day.

S. S. No. 323. Joseph Horace Brenigstall, 467 Vinewood Ave., Detroit, Mich., rec. by E. R. Jones and Walter M. Chase.

S. S. No. 324. Wallace H. Grigg, Clawson, Mich., rec. by E. R. Jones and Walter M. Chase.

S. S. No. 325. Harold Edgar Shook, 75 4th St., Portland, Ore., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 326. George Peter Gakidis, 160 Chestnut St., Manchester, N. H., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 327. Benjamin P. Gelman, 143 Madison St., New York, N. Y., rec. by S. Lesser and S. L. Mohl.

S. S. No. 328. Donat Theodore Leclair, 289 Walnut St., Holyoke, Mass., rec. by E. A. Loiselle and W. D. Walters.

S. S. No. 329. John Reuben Burke, Main St., Soledad, Calif., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 330. Eugene Camile Moser, 734 Tate St., Memphis, Tenn., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 331. Edwin Royer Spangler, 121 East Main St., Ephrata, Pa., rec. by C. Reed Cox and Charles H. LaWall.

S. S. No. 332. Joseph W. Renshaw, cr. Lamar & Rankin Dg. Co., Atlanta, Ga., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 333. Peter McKenna, West Side Square, Macomb, Ill., rec. by C. Dougherty and L. D. Lyons.

S. S. No. 334. Maximilian Mark Nemser, 88 First Ave., New York, N. Y., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 335. James Harold Dolan, Perry & Howard Sts., Pontiac, Mich., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 336. William Fuller Weatherwax, Moulton, Ala., rec. by E. W. Pressley and H. G. Eskin.

S. S. No. 337. Timothy James Landers, 996 Putnam Ave., Brooklyn, N. Y., rec. by Jacob H. Rehfuss and Louis F. Meister.

S. S. No. 338. Robert Francis Carter, 6630 Germantown Ave., Phila., Pa., rec. by Robert P. Fischelis and F. E. Stewart.

S. S. No. 339. William Sidney Jones, 1008 N. C. Ave., S. E., Washington, D. C., rec. by Charles B. Campbell and E. A. Gaylor.

S. S. No. 340. Earl Wm. Meyer, 2120 Broadway, Toledo, Ohio, rec. by S. B. Dewey and C. E. Roseman.

S. S. No. 341. Esla K. Watkins, 220–22 Locust St., Carlisle, Ky., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 342. Leo J. Miller, Post Hospital Ft. Leavenworth, Kansas, rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 343. Frank Hobart Eby, 2038 Cherry St., Phila., Pa., rec. by C. A. Harbold and L. W. Ostwald.

S. S. No. 344. Joseph Aloysius Ortolan, U. S. Naval Training Sta., San Francisco, Cal., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 345. John Frank Suchy, School of Pharmacy, Univ. of Montana, Missoula, Mont., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 346. Dennis B. Long, 373 Center St., Iona, Mich., rec. by W. D. Walters and R. P. Fischelis.

S. S. No. 347. Robert Rhemm Goldsborough 516 Scott St., Little Rock, Ark., rec. by W. D. Walters and R. P. Fischelis.

J. W. ENGLAND, *Secretary*.

415 N. 33RD STREET.

WAR VETERANS.

Every pharmacist who served in any capacity in the Army, Navy or Marine Corps or who did his, or her, bit in welfare work during the war, is eligible to membership in the War Veterans' Section of the American Pharmaceutical Association and *in the association itself* this year without payment of dues.

There are approximately ten thousand pharmaceutically trained men who were connected in various capacities with the Army and Navy and more than three thousand of them have already been offered an opportunity to join the A. Ph. A. in its efforts to place pharmacy—and military pharmacy in particular—on a higher plane.

Before any really worth-while results can be obtained it is necessary that the great majority of these ten thousand men unite in a single organization and that organization can well be the War Veterans' Section of the A. Ph. A.

There is no red tape connected with "joining up." Just address a postal card to the secretary, W. D. Walters, Post Hospital, Fort Leavenworth, Kansas, and we will do the rest. Or, better yet, write him a letter and tell him something concerning your "Service record." An effort is being made to compile a history of pharmaceutical service during the war and there is no better way of getting the facts than to have them furnished by the men themselves. Let's go!

EDITORIAL NOTES

Editor: E. G. EBERLE, Bourse Building, Philadelphia, Pa.

Committee on Publication: J. W. ENGLAND, *Chairman;* G. M. BERINGER, CASWELL A. MAYO, H. B. MASON, E. L. NEWCOMB, and the Editor-in-Chief of the JOURNAL, General Secretary, Treasurer and Reporter on the Progress of Pharmacy, *ex-officio.*

OFFICERS-ELECT OF THE AMERICAN PHARMACEUTICAL ASSOCIATION FOR 1920–1921.

The Board of Canvassers, A. Ph. A., composed of Irwin A. Becker, Clyde M. Snow, William Gray, E. N. Gathercoal and A. H. Clark, have announced the results of the election as follows:

President, Charles Herbert Packard, Boston, Mass.

First Vice-President, E. Fullerton Cook, Philadelphia, Pa.

Second Vice-President, Charles E. Caspari, St. Louis, Mo.

Third Vice-President, W. P. Porterfield, Fargo, N. D.

Members of the Council: Harry B. Mason, Detroit, Mich.; L. E. Sayre, Lawrence, Kans.; Frederick J. Wulling, Minneapolis, Minn.

The ballots were counted January 21, 1920, and 1292 votes were cast.

INFORMATION DESIRED.

The New Jersey Pharmaceutical Association celebrates its fiftieth anniversary this year, and the committee in charge of the celebration desires a complete list of the living ex-presidents; only one address is lacking, that of Joseph P. Canby, who was in business in Atlantic City in 1882 and in that year was elected president of the New Jersey Pharmaceutical Association. Anyone knowing the present address of Mr. Canby will confer a favor by writing Edward A. Sayre, 100 Henry St., Orange, N. J.

The Civilian Relief Committee, American Red Cross, Waterloo, Iowa, desires to locate Joseph Henry Harvey, a pharmacist and a graduate of Northwestern University, who at one time worked in Chicago, Ill. Mr. Harvey is thirty-four years old, and his family formerly lived in Dyersville, Iowa. His mother is sick, and information should be sent to Mrs. Etta H. Worthen, Home Service Section, American Red Cross, Waterloo, Iowa.

A CONSERVATIVE STATEMENT RELATIVE TO ALCOHOLIC BEVERAGES IN TREATMENT OF THE SICK.

Newspapers are more careful than formerly in reporting statements made by professional men; as a result, more publicity the public should have will be given by physicians and others and will be productive of much good. Among the latter we quote from a recent newspaper report in which Dr. Solomon Solis-Cohen expresses his views relative to the use of alcoholic beverages: "Self-drugging with alcoholic beverages is as harmful as self-drugging with commonly used remedies. Whiskey, brandy, and the like are in certain cases absolutely essential in the treatment of the sick. Whether they will be harmful or useful in any particular case is a matter to be determined by a skilled physician."

DEATH OF PROF. EUGENE COLLIN.

Prof. Eugene Collin, who was elected an honorary member of the American Pharmaceutical Association at the recent New York meeting, died December 22, at Colombes, Seine, France. He was a chevalier of the Legion of Honor. The deceased was born in 1849 at Carignan, and was apprenticed to a pharmacist at Charleville. He went to Paris in 1867, and graduated in pharmacy in 1871, his thesis being on "the rhubarbs." Following his graduation he conducted a pharmacy at Verdun for eleven years; thereafter he was in business in Colombes until 1888, when he was made a member of the faculty of the Paris School of Pharmacy, and he also accepted an official position in connection with the French anti-adulteration Act.

Eugene Collin possessed in a high degree the rare combination of artistic and microscopical ability, and he was an expert engraver. He made many of his own drawings and prepared the copper plates for them. He was one of the pioneers of micrography in the study of materia medica and collaborated with Pro-

fessors Gustave Planchon, H. G. Greenish, M. Villiers and E. Perrot. As an author he is known in the United States by the "Anatomical Atlas of Vegetable Powders;" this, however, is not his only work, and he was also a very frequent contributor to the *Journal de Pharmacie.*

Professor Collin received the Hanbury Medal in 1903 and in 1907 he was elected to honorary membership in the Pharmaceutical Society of Great Britain.

Dr. R. C. Maclaurin, President of the Massachusetts Institute of Technology since 1908, died at his home in Cambridge, Mass., January 15, of pneumonia. While he knew of the magnificent donation of Mr. George Eastman, he was not permitted to share in seeing the developments made possible by the gift. Pharmacy needs not only men like Dr. Maclaurin, but also representatives of the type of the donor.

Prof. Herbert Spencer Woods, assistant in the department of physiology, pharmacology and biochemistry of Baylor University, College of Medicine, Dallas, Texas, died January 4, 1919, following an operation. Professor Woods received the A. B. and A. M. degrees at the University of Missouri. He will be remembered for work done with the late Waldemar Koch on the quantitative estimation of the lecithins and other work done at various agricultural experiment stations of the United States.

Data Lost in Fire at Johns Hopkins.—Valuable data and records, covering two years' research in the cause and effect of influenza, made by Dr. Thomas M. Rivers, an authority on this disease, and the laboratories of Dr. Bayne Jones and Dr. Lloyd D. Felton, containing apparatus and data of inestimable value, were destroyed in the fire which recently broke out on the top floor of the pathologic building in the Johns Hopkins Hospital group.

E. I. du Pont de Nemours & Co. announce the completion of the company's technical laboratory at Deepwater Point, N. J., for the study of experimental and technical problems. A trained staff of chemists is conducting research work; a very complete library is in the building.

Howard B. French, president of the Philadelphia College of Pharmacy, has been elected a vice-president of the Philadelphia Chamber of Commerce.

William Mittelbach, of Booneville, Mo., a member of the American Pharmaceutical Association since 1891, has retired from the drug business. He has been treasurer of the Missouri Pharmaceutical Association for twenty-five years; in 1893 he was president of the State Association. Mr. Mittelbach was Second Vice-President of the A. Ph. A. in 1904 and First Vice-President in 1906. It is his intention to take a well-earned rest, and thereafter assume new duties.

Edmund L. Scholtz, a prominent pharmacist of Denver, Colo., has retired from business after forty-seven years of active service. Mr. Scholtz came to Denver in 1873, entering the employ of William Dingle, druggist, at 16th and Blake Streets. In 1881 he engaged in business with Paul Hanus, now professor of pedagogy at Harvard University. Later, the Scholtz Drug Company was formed, and under its ownership and control are seven stores and a supply department. The success and standing of the Company are well known, and members who attended the Denver meeting will remember the interest Mr. Scholtz evidenced in pharmacy. It is said that he will make his home in California.

THE TEACHING OF THERAPEUTICS.

It is hoped that the purpose of the article by Dr. Hobart Amory Hare in the *Journal A. M. A.*, February 7, 1920, will not be misinterpreted by reprinting only portions of this valuable and timely presentation of an interesting topic for physicians and pharmacists. The author writes:

"I am writing this paper because I am hopeful that it may direct attention to what is a crying fault in medical education to-day, namely, the neglect of teaching students how to treat patients for the alleviation or cure of disease. I am hopeful that some good may come of it because the Council on Pharmacy and Chemistry of the American Medical Association for years past has been endeavoring to inform physicians regarding the use of proprietary products and to persuade them to prescribe drugs, proprietary or not, intelligently.

"The work that the Council has done is, of course, praiseworthy in intent, and is good as far as it goes in one line, to wit, to improve medical practice among graduates; but the prime difficulty lies in the teaching of practical therapeutics to the undergraduate and to the hospital intern. This embryo practitioner in almost every medical school has no training in pharmacy, little or no training in the use of the official names of drugs or of their doses,

and no training whatever in the fact that doses of different sizes, although they be of one drug, may be useless, useful or harmful, or become so after some days. He, therefore, enters practice utterly at sea when he is called on to write a prescription.

"I have known of eye drops to be ordered by the quart, oleoresins mixed with aqueous solutions, powerful alkaloids, such as strychnine, put in a mixture with potassium iodide, whereby nearly all the strychnine went into the last dose, and a host of other errors too numerous to mention. I have seen a thousandth of a grain of arsenous oxide given three times a day to an adult, and a grain of atropin put in each pill; and no druggist exists who, if diplomacy did not restrain him, could not humiliate almost every physician whose recipes come to his shop. Because the medical man knows nothing of the bulk of drugs or the most efficient vehicles, or excipients, he takes the easiest way out of his dilemma and orders products already prepared, which products are often the result of much experience and scientific pharmacy.

"The remedy for all this is to have every student make in a pharmacy laboratory at least one representative of each class of preparations official in the Pharmacopoeia and the National Formulary. I believe that this is done in only one school of medicine in the United States.

"The young graduate, having had no experience or teaching as to doses, naturally uses doses that some commercial laboratory names. He may have been taught 'doses,' but he has no idea that small doses of digitalis may be useful in one case, whereas almost toxic doses may be absolutely essential in another, and so loses the patient that needed the large dose. He uses the compound mixture of licorice as a vehicle in a case of profuse bronchorrhea or threatened pulmonary edema, not knowing, or forgetting, that its most active ingredient is antimony, which is absolutely contraindicated. * * *

"At present an attempt is made to make pharmacologists out of men who are going to practice medicine. A real pharmacologist is a highly educated man in physiology and chemistry, an investigator, a discoverer, and by rights a leader in the higher realms of therapeutics—one who should teach medical students how drugs can be studied and should be studied in the laboratory, and to determine fundamental facts about remedies. But to try to train the general run of students, who will never have a laboratory, to be pharmacologists without first teaching elementary practical therapeutics is somewhat like a great opera singer trying to make every one a great singer, or as if one should attempt to make his infant son sing before he tried to teach him to walk. The use of instruments of precision necessary for the study of drugs, if taught at all, should be at the bedside. * * The lack of training as to what to do, what not to do, and when to do, as to remedies, is one of the weak spots in medicine to-day. I firmly believe that if the present generation of students is properly taught practical therapeutics, the chief labor of the Council on Pharmacy and Chemistry will be an accomplished fact, for the right way will be the easiest way. Let us first make good physicians and from these may be sifted out those who can and want to become laboratory pharmacologists."

IT DEPENDS UPON THE ARGUMENT.

In St. Louis recently a jury disagreed in the suit brought by our Government against a manufacturer of saccharin and the matter will again have to go to trial. In France it was decided last fall to continue as a peace measure the war-time repeal of anti-saccharin legislation, the revenue from the government monopoly of this industry continuing to aid the national exchecquer.

"METHANOL:" METHYL ALCOHOL.

The Wood Products Co., in order to protect the public against the dangerous or unlawful use of its products, has decided to eliminate the word "alcohol," even though used with "wood" or "methyl," altogether from its brands, stenciling, invoices, literature, etc., substituting instead the word "methanol."

JAPANESE CAMPHOR, MENTHOL AND OIL OF PEPPERMINT PRODUCTION.

According to the *Japan Gazette*, Japanese authorities are encouraging the laying out of camphor plantations with a view to meeting the growing demand in the international market. The Japanese Camphor Monopoly Office early in the year drew up a program for protecting the celluloid industry at home, and curtailing the shipments of camphor abroad.

The Bureau of Foreign and Domestic Commerce, Washington, D. C., reports that menthol crystals, produced from the 1918 crop, amount to 400,000 pounds, and estimated production from the 1919 crop will be 160,000 pounds; peppermint oil from the 1918 crop, 270,000 pounds, and from the 1919 crop, 108,000 pounds.

Evidently there will be a decided shortage in the crop of 1919. Japanese farmers are growing mulberry plants, the leaves of which are used as feed for silk worms, instead of cultivating peppermint.

SHORTAGE OF JALAP AND OF GENTIAN.

The principal Mexican towns from which any amount of jalap root is shipped are San Miguel, Xico and Coscomatepec, all in the district where the greatest damage has been done and where the most lives were lost during the recent earthquakes. The mountain of San Miguel, near the town of the same name, is in active eruption.

It is safe to say that the only jalap root which will be shipped from Vera Cruz for some time will be small amounts that have been stored in the warehouses of the commission merchants in Cordoba and Vera Cruz. During the month of December 1919, only 1,816 kilos of jalap root were shipped from this port to the United States.

The amount of gentian root gathered in Spain this year is estimated not to exceed 400 tons. Last year's yield was only 200 tons, but stocks from the previous year's crops were then available. The crop of 1916 amounted to 1,000 tons and that of 1917 to 500 tons.

ANTHRAX IN JAPANESE SHAVING BRUSHES.

The British Ministry of Health announces that cases of anthrax have occurred in Great Britain, through infection conveyed by shaving brushes from Japan. The following treatment is suggested for brushes suspected of carrying the infection:—Thoroughly wash the hair of the brush with soap and warm water, to which a little washing soda has been added, rinse in warm water, and then immerse for one hour in a disinfecting solution of two tablespoonfuls of formalin in half a pint of water. The disinfecting solution should be at a temperature slightly above the body heat. After removal from the solution the brush should be allowed to dry before use. Care should be taken not to allow the hair of the brush to come in contact with the hands.

VARNISH FOR RAT TRAPS.

Strong lithographic varnish has been recommended for effectively destroying rats on a large scale. The varnish is thinned by heating and spread on heavy strawboard of a size meeting the needs, one–two feet square. The bait is placed in the center. As to the cruelty, Dr. Howarth, Medical Officer for the City of London, states that sentiment cannot be wasted, that this method is not as cruel as some means of poisoning.

ISOLATION OF PFEIFFER BACILLUS REPORTED IN CHICAGO INFLUENZA CASES.

Dr. Earl C. Carr, lieutenant in charge of the main laboratory at the Great Lakes Naval Training Station, announced on January 24, the isolation of the influenza germ.

NATIONAL DRUG STORES CORPORATION.

The National Drug Stores Corporation has been organized; R. B. Wattley, former treasurer of the Liggett Company, is a large, if not the principal, stockholder. A number of stores in New York City and New England have been acquired and the purchase of the three Guilford stores in Rochester has been announced.

THE NORVELL CHEMICAL CORPORATION.

The Norvell Chemical Corporation, of Perth Amboy, N. J., was incorporated in the State of Delaware on January 1. The stockholders elected the following directors and officers: *President*, Donald McKesson; *Vice-President* and *Treasurer*, Samuel Norvell; *Second Vice-President*, Francis J. McDonough; *Secretary*, William S. Gray, Jr.; *Assistant Treasurer* and *Assistant Secretary*, James J. Crawford. The corporation will operate the plant, supplying pharmaceutical chemicals and chemicals for the manufacture of a variety of products.

SYNTHETIC TARTARIC ACID.

The United States, before the prohibition wave engulfed the vineyards where wine grapes are raised, produced 10,000,000 pounds of cream of tartar a year and about 1,000,000 pounds of tartaric acid. As the cream of tartar cannot be obtained except through the fermentation of the wine, the grape juice industry is unable to supply the household want hitherto filled from the vats of the vintner.

By the Weiss-Downs process, explained in a paper before a recent meeting of the New York

Section, American Chemical Society, tartaric and related acids can be economically manufactured synthetically.

THE OWL DRUG COMPANY EXTENDS ITS ACTIVITIES EASTWARD.

The Owl Drug Company has recently acquired all of the rights in connection with the "Owl Drug Company," of Illinois. Just prior to the outbreak of the war a distributing plant was established in Chicago, and the company expected then immediately to extend its system of retail stores. The war upset those plans, but they will be carried out now, and the company announces that it intends "to vigorously renew our campaign against those who have infringed upon our trade-mark and trade name by the use of the word 'Owl,' or the picture of an owl in the conduct of retail stores."

The company now has thirty-six stores on the Pacific Coast and in Spokane, Wash.; Milwaukee, Wis.; Minneapolis and St. Paul, Minn., and Chicago, Ill.

GEORGE R. HILLIER, DEAN OF THE CRUDE DRUG TRADE, HONORED.

George R. Hillier, president of R. Hillier's Son Co., New York City, was honored at the fiftieth anniversary celebration of Amity Masonic Lodge, Jersey City. Mr. Hillier is the only surviving charter member of his lodge, he is the first president of the New York Drug and Chemical Club. Last May he celebrated his eightieth birthday.

WM. R. WARNER & CO. PURCHASE NEW LOCATION FOR LABORATORY.

Announcement is made of the purchase of a block in the drug industry section of St. Louis, by Wm. R. Warner & Co. The buildings have a ground area of 75,000 square feet and will be converted into laboratories which will double the manufacturing facilities of this firm.

GEORGE A. KELLY COMPANY'S NINETIETH ANNIVERSARY.

George A. Kelly Company, wholesale druggists of Pittsburgh, Pa., announce the ninetieth anniversary of their business in an interesting booklet. The illustrations are supplemented by an historical account of the progress made by the firm and of the growth of Pittsburgh and western Pennsylvania. The work of the artist and printer is good and deserving of favorable comment.

OBITUARY.

EDWARD S. MAGUIRE.

Pharmacist Edward S. Maguire, U. S. Public Health Service, died in the U. S. Marine Hospital at Savannah, Georgia, on January 24, 1920.

He was stationed at the U. S. Quarantine, Port of Savannah. On January 22 he was stricken with apoplexy while on duty, was immediately brought to the Marine Hospital, in an unconscious condition, and did not regain consciousness up to the time of his death. Mrs. Maguire was constantly at his bedside.

Pharmacist Maguire had been in the Service since July 16, 1883. He joined the American Pharmaceutical Association in 1897.

A. M. Roehrig,
U. S. Marine Hospital.

GRACE E. HOFFMAN.

Miss Grace E. Hoffman, daughter of James L. Hoffman, pharmacist of Allentown, Pa., died at the University Hospital, Philadelphia, Pa., October 11, 1919. Miss Hoffman received injuries by being run down by an automobile a few days prior to her demise.

Miss Hoffman graduated from the Philadelphia College of Pharmacy in 1915, and joined the American Pharmaceutical Association the year following her graduation. During her school years she was employed in Philadelphia hospitals, and afterward in the laboratories of H. K. Mulford Company at Glenolden, Pa. She was soon to have entered business on her own account in a partnership with her brother, John H. Hoffman, at Broad Street and Belfield Avenue, Philadelphia, Pa.

JOSEPH W. ECKFORD.

We have only recently been advised of the death of Dr. Joseph W. Eckford, of Aberdeen, Miss., April 5, 1919. Dr. Eckford was the oldest member from Mississippi, having joined the Association in 1883.

While he had attended only a few of the annual conventions, he was deeply interested in pharmacy; in 1889 he was Third Vice-President of the Association. He participated actively in the Mississippi State Pharmaceutical Association. Mrs. Eckford survives the deceased.

SOCIETIES AND COLLEGES.

THE FIRST MEETING OF THE EXECUTIVE COMMITTEE OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The first meeting of the newly created Executive Committee of the American Pharmaceutical Association was held in St. Louis, Mo., January 31. All members of the Committee were present: Lewis C. Hopp, Cleveland, Ohio, *Chairman;* J. W. England, Philadelphia, Pa, *Secretary; Members:* James H. Beal, Urbana, Ill.; William B. Day, Chicago, Ill.; H. M. Whelpley, St. Louis, Mo.; L. E. Sayre, Lawrence, Kas.; Geo. M. Beringer, Camden, N. J.; E. G. Eberle, Philadelphia, Pa. There were present during some of the sessions several of the St. Louis members and members of the Board of Trustees, U. S. P., among these, Ex-President Charles H. LaWall, F. W. Meissner, Francis Hemm, Dr. Otto A. Wall, Charles Gietner, H. C. Christensen, Charles E. Caspari and others.

The St. Louis Branch, A. Ph. A., held a meeting at the Planters Hotel, January 30. Members of the Board of Trustees, U. S. P., and of the Executive Committee A. Ph. A., were present; preceding the business session a dinner was served.

In the absence of President B. H. St. John, the Branch meeting was called to order by Lieut. F. A. Federer. After the transaction of regular business Dr. H. M. Whelpley was asked to preside in carrying out the program of the evening. Dr. J. H. Beal presented a paper on some phases of legislation; he was followed by Dr. H. W. Wiley, President of the U. S. P. Convention. President L. E. Sayre of the A. Ph. A., spoke for a larger membership in the American Pharmaceutical Association. There were more than fifty in attendance and indications are promising for an increased activity in the St. Louis Branch. A report of the transactions of the Executive Committee must be left to the next issue of the JOURNAL A. Ph. A.

WAR VETERANS OF THE A. PH. A.

Those desiring to become members of the War Veterans' Section of the A. Ph. A., should get in touch with the Secretary, Capt. William D. Walters, Post Hospital, Ft. Leavenworth, Kans. Every pharmacist who served in the war should belong to this organization. There is no expense for the first year of membership.

Roland B. Grom, a veteran of the World War, and since the war an employee in the laboratory of the Virginia State Department of Agriculture, died at his home in Richmond, Va., early in December. He was a native of Newark, N. J., received his preliminary education in public and private schools of that city, was graduated from the New Jersey College of Pharmacy and continued his studies at the Philadelphia College of Pharmacy, from which institution he graduated in 1909.

BOARD OF TRUSTEES, U. S. P., CONVENES IN ST. LOUIS.

The board of Trustees, U. S. P., met in St. Louis, January 30. Arrangements were considered for the decennial convention to be held during the week of May 10, in Washington.

WILLIAM ALBERT NOYES ELECTED PRESIDENT OF THE AMERICAN CHEMICAL SOCIETY.

Dr. William A. Noyes, of the Department of Chemistry, University of Illinois, has been elected president of the American Chemical Society. He was editor of the *Journal of the American Chemical Society* from 1902 to 1917. Dr. Julius Stieglitz says of the president-elect: "Under the leadership of Dr. W. A. Noyes the department of chemistry at the University of Illinois has emerged from comparative obscurity to a position among our finest university laboratories. With the support of a far-seeing university president his department is a bee-hive of research in practically every line of chemical effort."

President Noyes was one of the earliest r ecipients of the Nichols Medal (1908) for his work on the atomic weight of chlorine. He recently received the Willard Gibbs Medal for pioneer work on the electro-chemical theory of valence.

Dr. A. R. Bliss, Jr., of Atlanta, has been re-elected associate referee on alkaloids by the National Convention of the Association of Official Agricultural Chemists, of Washington, D. C. Dr. Bliss is head of the department of pharmacology in the school of medicine of Emory University, Atlanta, and has served as referee on alkaloids to this national body since 1917.

ARMY AND NAVY PHARMACISTS.

CONFERENCES WITH THE SURGEON GENERALS.

The Secretary of the National Pharmaceutical Service Association, E. Fullerton Cook, has had the opportunity on several occasions recently, to confer with Surgeon General Ireland of the Army and Surgeon General Braisted of the Navy, concerning the details of proposed pharmaceutical work in the reorganized military service.

It is gratifying to learn that Dr. Ireland's plan for a Medical Service Corps, which is to assume work that is not strictly medical, but connected with the medical corps, has met with the approval of both the Committees of the House and the Senate, and of the General Staff of the Army, and is incorporated as a part of the new Army bill about to be submitted to Congress. It will be remembered that Dr. Ireland agreed to have a *pharmaceutical section* in this Medical Service Corps, in which a limited number of pharmacists would be commissioned. This favorable status for the proposed Service Corps practically assures its enactment into law, and the establishment, for the first time, of proper pharmaceutical representation in the United States Army. The original suggestion of Dr. Ireland, that a five-year enlistment period be the prerequisite for securing commissions, was criticised by many pharmacists, and it was pointed out that those men who were most competent to administer the activities of such a corps would never be willing to serve as a private for five years to secure the commission.

In the recent conference with Dr. Ireland and Colonel Darnall, these facts were pointed out and were appreciated by the Surgeon General, and it was agreed that modifications would be asked for in the bill establishing the Medical Service Corps. The suggested modifications consist first of the change of the five-year enlistment to three years as a prerequisite for commissions. Second, a recognition by the Surgeon-General's office of previous military training, or suitable technical training, as a part of this three-year enlistment. In other words, a commission to be granted in less time than three years, if the training previously received justified such appointment. Under similar rules in the Navy, commissions have been earned in a short time by men who have had suitable training before enlistment and it is proposed to follow the same plan in the Army.

Another fact which will be gratifying to pharmacists was the interest expressed by Dr. Ireland in the establishment of a reserve officers' training school, for the prospective Reserve Medical Service Corps, which it is hoped Congress will authorize. The plan would be to arrange for special training for those graduates in pharmacy who desire to enlist in the Reserve Corps. This would be given in a reserve officers' training school and pharmacists could thus qualify as officers of the reserve corps, and be partially trained for immediate duty and commissions in time of war. Dr. Ireland also expressed the hope that if the Medical Service Corps is authorized by Congress, and the Reserve Corps established (and this he will undertake to organize), some of the highly trained pharmacists who have had military experience in the recent war will be willing to enlist at once as officers in this Reserve Corps and be placed on active duty in his office to assist in the organization and proper establishment of the pharmaceutical section. This plan would give the Corps at the beginning the benefit of the valuable experience of highly trained men who would probably be willing to devote a few months of their time for the establishment of the Corps on a scientific basis, but without the requirement that they serve longer than necessary for organization. Of course, the details must be more thoroughly developed, but the opportunity is offered pharmacy to establish itself in the Army on the highest possible plane, and Dr. Ireland is very willing to cooperate with pharmaceutical leaders to that end.

The situation in the Navy at this time is as follows: The Bureau of Medicine and Surgery is entirely in harmony with the principle represented by the Darrow Bill, and have done all within their province to advance this legislation. Of course, it is understood that Navy officials cannot personally advocate legislation, but can only recommend to the Secretary of the Navy what they believe would be to the best interests of their Departments. However, on January 30th, Dr. Braisted, the Surgeon General, appeared before the House Committee on Naval Affairs concerning the annual appropriation, and this opportunity was taken to secure his testimony concerning the Darrow Bill. He gave the members of the Committee his hearty endorsement of the principles involved in this bill and explained the subject in detail. Every member of the Committee

had previously been interviewed and promised to give it his careful consideration.

The Darrow Bill has recently been submitted to the Bureau of Navigation, which must pass upon all suggestions for new commissions, and some opposition has been encountered. It is hoped that this may be overcome, as Dr. Braisted has sent a comprehensive brief to Admiral Washington, Chief of the Bureau of Navigation, setting forth the importance of establishing permanent commissions in the Hospital Corps, and presentations have been made by others to Admiral Washington, and he is giving the matter his consideration. It may become necessary to enlist the personal interest of every Congressman in this bill, and pharmacists of the country *should at once write to their representatives, urging that they support the Darrow Bill.*

In a conference with Admiral Washington, several alterations in the original draft were found to be desirable, but these can readily be incorporated. They consisted of change in rating so that instead of Captain, the highest rating authorized would be Lieutenant Commander. It was also suggested that "required sea duty" be introduced into the bill and also that it be distinctly indicated that the Hospital Corps is a branch of the Medical Corps, and not an independent organization. This latter has always been understood, but the bill apparently did not make it entirely clear. These modifications will be brought out at the hearings before the Naval Committee.

E. FULLERTON COOK.

GERMAN APOTHECARIES' SOCIETY.

The sixty-eighth annual meeting of the New York German Apothecaries' Society will be held on the evening of February 26 at the Turn Hall, corner of Eighty-fifth Street and Lexington Avenue. There will be a banquet and ball and the money received will be expended for charitable purposes.

The following are the officers of the society: *President,* Otto P. Gilbert; *Vice-Presidents,* Carl Baum and Fred Schaefer; *Recording Secretary,* George M. Uhlig; *Corresponding Secretary,* Hugo H. Schaefer; and *Treasurer,* Paul Wellenberger.

OFFICERS OF BALTIMORE DRUG EXCHANGE.

At the annual meeting of the Baltimore Drug Exchange the following officers were elected for the ensuing year: *President,* John C. Muth, of Muth Brothers & Co.; *Vice-Presidents,* Alfred E. Mealy, of Gilbert Brothers & Co., and William R. Sailer, of Sharp & Dohme; *Secretary,* George M. Armor, of McCormick & Co.; *Treasurer,* H. H. Robinson, of the Henry B. Gilpin Company; and *Executive Committee,* in addition to the officers mentioned, James E. Hancock, of John F. Hancock & Son; Philip I. Heuisler, of the Emerson Drug Company, and J. Emory Bond.

BALTIMORE RETAIL DRUGGISTS' ASSOCIATION.

Baltimore druggists have inaugurated neighborhood meetings which have proved to be very satisfactory. The Baltimore Retail Druggists' Association will hold its annual banquet at the Emerson Hotel, Thursday, February 19th. Governor Ritchie will be the speaker of the evening.

Preparations are being made by the members of the Maryland Pharmaceutical Association, the Maryland Board of Pharmacy and the Baltimore Retail Druggists' Association to go ahead with the movement to divorce drugs from the pure food and drug law of the State.

OFFICERS OF THE PHILADELPHIA DRUG EXCHANGE.

The following are the officers for this year of the Philadelphia Drug Exchange: *President,* Harry B. French, Smith, Kline & French Co.; *Vice-President,* Charles E. Hires, Charles E. Hires Co.; *Secretary,* Joseph W. England; *Treasurer,* Anthony M. Hance. *Directors:* Milton Campbell, H. K. Mulford Co.; Blair Fergusson, Fergusson Brothers; A. L. Hillis, Jr., Robert Shoemaker & Co.; Herbert R. McIlvaine, McIlvaine Brothers; Dr. Adolph W. Miller, Aschenbach & Miller; Adam Pfromm, Adam Pfromm & Co.; Clayton F. Shoemaker, Shoemaker & Busch, and Walter V. Smith, Valentine H. Smith & Co.

The annual Report on the Drug Market, presented by Clayton F. Shoemaker, received hearty approval and the reporter was congratulated on the excellent presentation.

The annual banquet of the Philadelphia Drug Exchange, held in the Bellevue-Stratford, January 30, will rank among the most memorable of the functions ever given by this organization. The Mayor of the city, J. Hampton Moore, spoke on "Philadelphia, the City That Gave Birth to the United States, and the World's Greatest Workshop"; the theme of Dr. Solomon Solis-Cohen, Professor of Clinical Medicine, Jefferson Medical College, was "The Man Behind the Drug;" that of the Rev. Ernest Bawden, of the Oak Lane

Methodist Episcopal Church, "One Hundred Percent Americanism," and Dr. William T. Ellis, war correspondent, thrilled with "A Message to America from the Oldest Old World."

ST. LOUIS TO HAVE A DRUG AND CHEMICAL CLUB.

The Committee having the organization of the St. Louis Drug and Chemical Club in charge, is made up of the following: J. H. Ambler, O. L. Biebinger, Dr. Charles E. Caspari, W. C. Hayhurst, E. I. Hopkins, James H. Howe, Albert Bond Lambert, Edward Mallinckrodt, K. D. Mellier, G. D. Merner, George Merrell, Carl F. G. Meyer, L. R. Milliken, John F. Queeny, George S. Robbins, Frank Ruff, Fred Sultan, Dr. H. M. Whelpley, Ralph J. Whitelaw, Paul J. Wielandy and John A. Veazey.

The officers *pro tem* are: Carl F. G. Meyer, *president;* Oscar L. Biebinger, *vice-president;* James H. Howe, *treasurer*, and George S. Robbins, *secretary.*

The committee chairmen *pro tem* are: George R. Merrell, *Membership;* G. D. Merner, *Publicity;* Ralph T. Whitelaw, *Finance;* Dr. Charles E. Caspari, *Speaker*, and E. I. Hopkins, *House.*

THE PHARMACIST AND THE LAW.

PROHIBITION REGULATIONS.

(A COMPILATION FROM VARIOUS SOURCES.)

Regulations No. 60 may be obtained from the Federal Prohibition Commissioner or the Commissioner of Internal Revenue, if not obtainable from your Deputy Revenue Collector.

The charge has been made in a number of cities that druggists are endeavoring to profit by prohibition legislation. This should be denied and concerted effort made by all associations of druggists and pharmacists to take druggists out of the class of liquor dealers.

The deficiency appropriation bill recently reported to the House carries $1,000,000 for enforcing the prohibition act during the remainder of the fiscal year ending June 30 next. This makes a total of $3,000,000 for this purpose during this year.

Strong opposition to Internal Revenue Commissioner Roper's recommendation that the government buy the stocks of liquor now in storage and issue treasury certificates in payment for the same is developing in Congress among radical prohibition advocates.

Representative Volstead, of Minnesota, Chairman of the House Judiciary Committee, and author of the enforcement measure, is among the opponents of the Roper plan.

PRESCRIPTIONS.

No one but a physician holding a permit to prescribe liquor shall issue any prescription for liquor. And no physician shall prescribe liquor unless after careful physical examination of the person for whose use such prescription is sought, or if such examination is found impracticable, then upon the best information obtainable, he in good faith believes that the use of such liquor as a medicine by such person is necessary and will afford relief to him from some known ailment. Not more than a pint of spirituous liquor to be taken internally shall be prescribed for use by the same person within any period of ten days, and no prescription shall be filled more than once. Any pharmacist filling a prescription shall at the time indorse upon it over his own signature the word "canceled," together with the date when the liquor was delivered, and then make the same a part of the record that he is required to keep as provided in the law.

U. S. P. AND N. F. PREPARATIONS.

Distilled spirits and wines may be used in the manufacture of medicinal preparations in accordance with U. S. Pharmacopoeia and National Formulary or the American Institute of Homeopathy, provided they are unfit for beverage purposes. They must contain no more alcohol than is necessary, and must contain in each fluidounce a dose of recognized therapeutic value.

Preparations included in the U. S. Pharmacopoeia and National Formulary which are fit for beverage purposes will be regarded as intoxicating liquor and subject to the same restrictions.

DENATURED ALCOHOL.

Alcohol may be denatured by any one of the following seven formulas:

1. Mercuric chloride, 1:2,000; mercuric chloride, 0.8 Gm.

2. Hydrochloric acid, 60 Cc; alcohol, 64 Cc; water, 300 Cc.

3. Mercuric chloride, 1½ grains; hydrochloric acid, 2 drachms; alcohol, 4 fluidounces.

4. Formaldehyde, 2 parts; glycerin, 2 parts; alcohol, 96 parts.

5. Phenol, 1 drachm; tannic acid, 1 drachm; alcohol, 1 pint; water 1 pint.

6. Alum, 1/2 ounce; formaldehyde, 2 drachms; camphor, 1 ounce; alcohol and water, 1 pint.

7. Liquor Cresolis compositus (U. S. P.) 10 Cc; alcohol, 1,000 Cc.

SALE OF DENATURED ALCOHOL.

Retail druggists may sell alcohol medicated as above in quantities not to exceed one pint for other than internal use, without physicians' prescriptions, to persons not holding permits, provided that in each case the container bears a poison label. Alcoholic medicinal preparations, not for use for beverage purposes, may be sold by retail druggists on a physician's prescription, provided the name of the druggist appears on the prescription in the physician's handwriting. Prescriptions may not be issued for more than one pint of such liquors at any one time. Refilling of such prescriptions is forbidden. Pharmacists may refuse to fill such prescriptions if they have reason to believe that physicians are prescribing for other than medicinal purposes or that a patient is securing, through one or more physicians, quantities of intoxicating liquor in excess of the amount necessary for medicinal purposes, which shall not be more than one pint to the same person in ten days. Physicians may not prescribe liquor for their own personal use.

TOILET ARTICLES.

Bay rum can only be sold when denatured by the addition of 32 grains of tartar emetic to the gallon, and labeled "For External Use Only."

If the retailer desires to manufacture any proprietary medicines he must file application showing the name of the preparation and the percentage of alcohol, by volume, in the finished product. He must also furnish an affidavit showing that it is properly medicated, and copies of the advertising matter and the labels. This special application is not required if the retailer has stated in his application for right to use and sell that he desires to use liquor in compounding or refilling prescriptions for preparations which are unfit for beverage use, in quantities of not exceeding 5 gallons in any period of ninety days, and if his use is so limited.

CAUTION IN SELLING.

Preparations unfit for beverage use may not be sold under such circumstances that the seller may reasonably deduce an intention on the part of the purchaser to use the same for beverage purposes.

Tincture of ginger may not be sold by a retail druggist or other person to a consumer in quantities exceeding 2 ounces at one time, unless the consumer obtains a special permit from the director.

Persons desiring to obtain alcohol medicated in accordance with any one of the allowed seven formulae, and in excess of 1 pint, for a legitimate external purpose, may file an application without bond and obtain a special permit and permits to purchase on the usual form.

No flavoring extracts or syrups may be sold under such circumstances as indicate they are to be used for intoxicating beverage purposes.

The labels herein required must remain affixed to containers until they are completely empty, and no intoxicating liquors may be transferred from one container to another without placing the required label upon the new container. This does not apply to containers holding 1 pint or less.

WHEN $25 LICENSE IS REQUIRED.

Under the present regulation, if you sell any of the official preparations listed above as fit for beverage use, you must have a retail liquor dealer's license, costing $25.00 per annum, provided the sale is made in the original state; but if these items are sold only after further legitimate medication, you do not require this license; neither do you require this license for selling alcohol medicated under the seven formulae.

STATE LAWS.

It should be borne in mind that these regulations do not in any way amend your State laws so as to give you any greater rights than you are allowed under your State statutes. If you are prohibited from selling liquor under your State law, you cannot now do it as provided in the Federal regulations.

THE STEPHENS BILL.

Comment by Russell Colgate, of Colgate & Company:

"The Stephens Bill provides that manufacturers may make contracts with dealers by which the dealers agree to charge stipulated resale prices. They cannot do this as the law now stands. But these contracts are to be subject to the supervision of the Federal Trade Commission. This body is given authority, upon complaint, to investigate the fairness of the resale prices stipulated. If this measure

is passed in its present form, it will mean that there will then be two possible methods of protecting prices. First, the method of refusing to sell to price cutters, the legality of which was upheld in the decision of the United States Supreme Court in the Colgate case; and second, the method of maintaining prices by contract. There are said to be concerns who are unable for one reason or another to avail themselves of the first of these methods. If so, the legalizing of the second method will open that, as an alternative, to those who cannot use the first. The provision that the contracts and the stipulated prices shall be subject to the supervision of the Federal Trade Commission seems to us unnecessary. For, unless the manufacturer possesses a monopoly, he cannot name unduly high resale prices. Competition will compel him to make his resale prices reasonable.

"The Stephens Bill recognizes that price cutting is or may be an evil. The recognition of this evil is almost as important a feature of the bill as is the remedy provided. It is to be hoped that the time will come when indiscriminate selling below cost, or even without a reasonable profit, may be recognized as an unfair and unlawful method of competition, whether the manufacturer has any price contract with the dealer or not. The passage of the Stephens Bill will be a step in that direction."

NEW PUBLICATIONS.

Organic Chemistry. Victor von Richter. Newly translated and revised from the German edition by P. E. Spielmann. Vol. 1, 2d Ed. revised. 8vo. 719 pp. Price, $5.00. P. Blakiston's Son & Co., Philadelphia.

A Manual of Chemistry, Theoretical and Practical, Inorganic and Organic; Adapted to the Requirements of Students of Medicine. A. P. Luff and H. C. Candy. 6th Ed. 12mo. 745 pp. Price, $3.00. Chicago Medical Book Co., Chicago.

Production and Treatment of Vegetable Oils. T. W. Chalmers. 4to. 152 pp. Price, $7.50. D. Van Nostrand Co., New York.

Amateur Chemist; an Extremely Simple and Thoroughly Practical Chemistry for the Home, Office, Shop, and Farm. A. F. Collins. 12mo. 209 pp. Price, $1.25. D. Appleton & Co., New York.

Intermediate Textbook of Chemistry. Alexander Smith. 8vo. 520 pp. Price, $2.25. Century Co., New York.

Hydrogenation of Oils: Catalyzers and Catalysis of the Generation of Hydrogen and Oxygen. Carleton Ellis. 2d Ed. Revised and enlarged. 8vo. 767 pp. Price, $7.50. D. Van Nostrand Co., New York.

Chemistry and Manufacture of Hydrogen. P. L. Teed. 8vo. 152 pp. Price $2.40. Longmans, Green & Co., New York.

Colloid Chemistry: An Introduction with Some Practical Applications. Jerome Alexander. 16mo. 90 pp. Price $1.00. D. Van Nostrand Co., New York.

Opportunities in Chemistry. Elwood Hendrick. 12mo. 101 pp. Price, $0.75. Harper & Brothers, New York.

A Treatise on Prescription Incompatibilities and Difficulties. William J. Robinson. 263 pp. 12mo. Price, cloth, $3.00. The Critic and Guide Co., New York.

Carbohydrates: The Simple Carbohydrates and the Glucosides. E. F. Armstrong. 3rd Ed. 8vo. 239 pp. Price, $4.00. Longmans, Green & Co., New York.

Catalysis in Industrial Chemistry. G. G. Henderson. 202 pp. Price, $3.00. Longmans, Green & Co., New York.

Chemistry: Handbook of Chemistry and Physics. Hodgman, Coolbaugh, and Senseman. 7th Ed. 533 pp. Price, $2.50. Chemical Rubber Co., Cleveland, Ohio.

Enzyme Action, Nature of. W. M. Bayliss. 4th Ed. 8vo. 190 pp. Price, $2.50. Longmans, Green & Co., New York.

Organic Chemistry: Handbuch der Organischen Chemie. F. K. Beilstein. 4th Ed. 982 pp. Price, $15.00. G. E. Stechert & Co., New York.

Physical and Chemical Constants: Tables of Physical and Chemical Constants and Some Mathematical Functions. G. W. C. Kaye and T. H. Laby. 3rd Ed. 8vo. 153 pp. Price, $2.50. Longmans, Green & Co., New York.

Physical Chemistry: Lecture Demonstrations in Physical Chemistry. H. S. Van Klooster. 196 pp. Price, $2.00. The Chemical Pub. Co., Easton, Pa.

Physiological Chemistry: Laboratory Manual of Physiological Chemistry. E. W. Rockwood. 4th Ed. Revised and enlarged. 12mo. 316 pp. Price, $2.00. F. A. Davis Co., Philadelphia.

Organic Chemical Reagents. By Roger Adams, O. Kamm and C. S. Marvel. 8vo. 79 pp. Published by the University of Illinois.

Exercises in Chemistry. By William A. Noyes, Director of the Chemical Laboratory, and B. Smith Hopkins, Assistant Professor of Inorganic Chemistry in the University of Illinois. 12mo. 131 pp. New York, Henry Holt and Company.

American Pocket Medical Dictionary, Containing the Pronunciation of All the Principal Terms Used in Medicine, Surgery, Dentistry, Veterinary Medicine, Nursing and Kindred Sciences; with over Sixty Extensive Tables. Edited by W. A. Newman Dorland, A. M., M. D., Editor of the American Illustrated Medical Dictionary. 11th Ed., revised. 32mo. 717 pp. Flexible leather, $1.75; thumb indexed, $2.00. Philadelphia. W. B. Saunders Company. 1919.

Commercial Laboratory Notes. By C. L. Petty. Published by Dayton Metal Products Co., Dayton, Ohio. Price, $6.00.

The Application of the Principles of Breeding to Drug Plants, Particularly Datura. Bulletin of the University of Wisconsin, Serial No. 1005; General Series No. 789. By C. W. Woodworth. The University of Wisconsin Pharmaceutical Experiment Station. Circular 8, November, 1919.

Drug and Food Rulings. No. 24. Among the decisions and regulations contained the following relate to drugs:

301—Adulterated Aspidium. U. S. P.

302—Tentative Standard for Black Haw (*Viburnum prunifolium*).

303—Adulteration of Black Hellebore Root (*Helleborus niger*, L.).

304—Wild Roman Chamomile (*Anthemis nobilis*) and *Santolina chamaecyparissus* L. Substituted for Matricaria, U. S. P.

305—Fool's Parsley (*Aethusa cynapium* L.) Substituted for Conium Leaves (*Conium maculatum*, L.).

306—Gum Karaya substituted for gum tragacanth.

307—Seeds of *Japtropha curcas* substituted for castor beans.

308—Maracaibo bark sold as Cinchona bark.

309—Incorrect labeling of orizaba root (*Ipomoea orizabensis*).

310—Pteris Species substituted for sarsaparilla, U. S. P.

311—*Rheum rhaponticum* substituted for rhubarb.

312—Importation of Indian valerian root (*Valeriana wallichi*, D. C.).

313—Zea, N. F

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